npcurrent
Canadian Journal for Nurse Practitioners

2018
ISSUE 3

## Statins for Primary Prevention in the Elderly:
Is there evidence of benefit?

## Vaping in Youth
A wolf in sheep's clothing?

## Key Concepts
Key questions about Chronic Fatigue Syndrome

# UNDERSTANDING THE *Treatment Journey*

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Licensed medical cannabis producer AgMedica Bioscience Inc. is pleased to announce that medical registrations are now being accepted from patients seeking new health options and solutions to their unmet medical needs. Working closely with healthcare professionals across many communities, AGMEDICA and their staff understand the patient treatment journey. The company recently launched a patient-focused initiative entitled “Excellence in Cannabinoid Therapy Administration” (ECTA), a collaborative effort that offers support, education, hands-on training and a standardized approach to healthcare providers as they explore new ways of providing their patients with cannabinoid options. This win-win approach will enable optimal patient care, support low risk and responsible cannabinoid use and foster an open and ongoing dialogue between patients and their trusted healthcare provider.

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Our Patient Promise - All new and current patient registrations will always be treated as a priority – no out-of-stocks, switch-outs, or waiting.

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A Canadian Journal for Nurse Practitioners

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ISSN 2561-8059

# contents

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Canada's Journal for Nurse Practitioners

As 2018 draws to a close, we are thrilled to have now published our third issue of the NP Current and are making plans for six regular issues of NP-focused content for 2019!

We are so pleased with the encouraging responses from NPs across the country and grateful for your continued support and engagement. The NP Current continues to grow, with participants on our peer review board and submissions of NP-authored articles.

Please continue to reach out and share your ideas about topics you would like to see covered. Your submissions and suggestions will ensure that the NP Current reflects the full spectrum of NP-led healthcare in Canada. Have a great idea for a new article? Think we could be doing something better? Let us know!

With warmest wishes for 2019 and gratitude,

Melissa Lamont
Managing Editor
melissa@npcurrent.ca

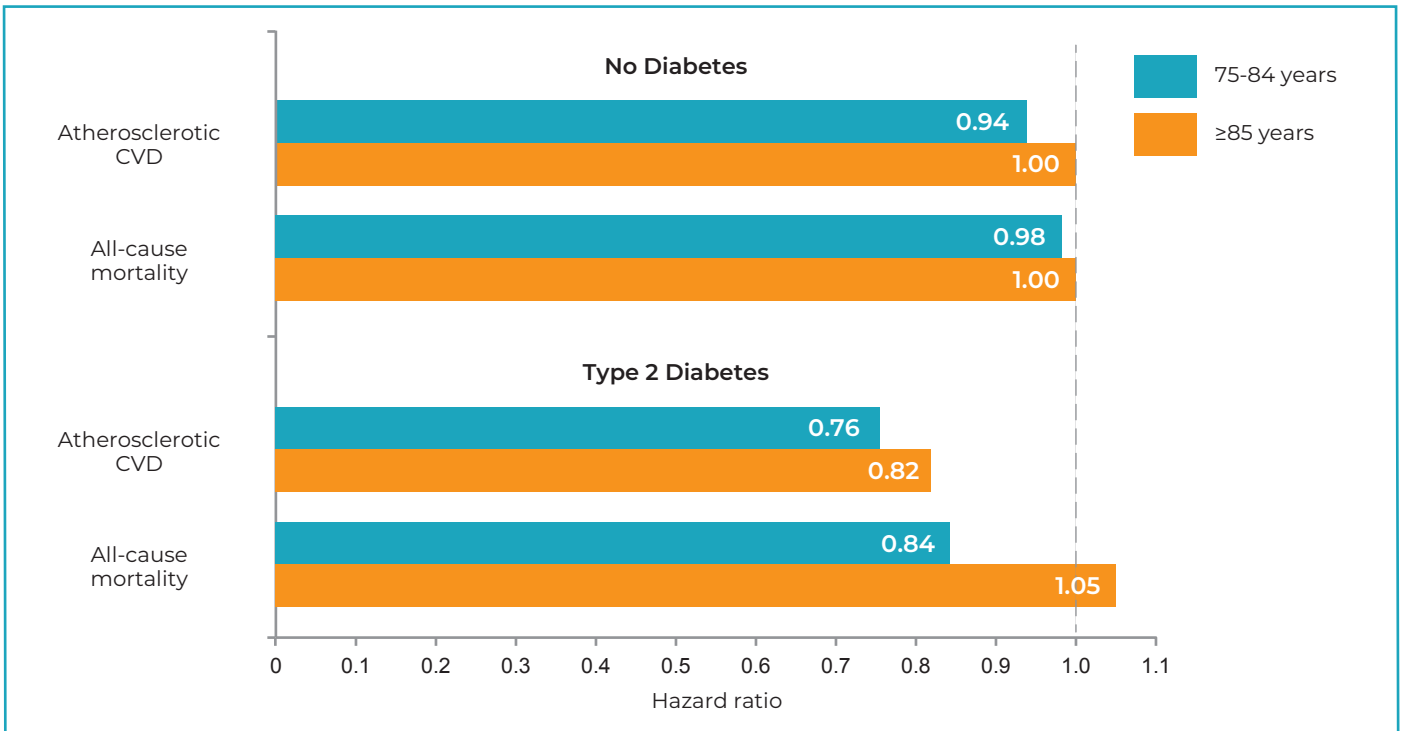
**The NP Current will only accept advertisements for products and services that are consistent with our goal of providing accurate and relevant information to NPs. To that end, all advertisements in the NP Current must comply with Health Canada guidelines for advertising to Canadian healthcare providers.**

# Statins for Primary Prevention in the Elderly (74+):

## Is there evidence of benefit?

With an aging population the management of cardiovascular disease (CVD) in the older adult is a common occurrence in most primary care settings. Large multicentred studies and meta-analyses have demonstrated effectiveness of statins as primary prevention for CVD in those >65 years, and secondary prevention of CVD in those >74 years of age.[1-3] There is, however, limited data for the use of statins as primary prevention in the >74 years demographic, a demographic that is increasing each year. A group in Spain recently undertook a retrospective cohort study to examine whether statins as primary prevention offered the same benefit in this older population.[4]

Using the database of the Catalan Primary Care System Spain (SIDIAP), the authors extracted data sets to analyze statin use and incidence of atherosclerotic CVD and all-cause mortality. Patients were categorized by age into old (74-84 years) and very old (>85yrs) groups. The cohort included 46,864 participants (mean age 77 years; 63% women) with a median follow-up 5.6 years. Inclusion criteria was at least one visit to the primary care system and a new statin prescription. In order to limit confluence of frailty, patients with a diagnosis of comorbid conditions such as cancer and dementia were excluded. Patients with prior evidence of cardiovascular disease were also excluded.




Statins for primary prevention: Hazard ratios by age and diabetes status

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# Statins for Primary Prevention in the Elderly (74+):

## Is there evidence of benefit?

Continued from page 3

The authors found that the effectiveness of statins in preventing atherosclerotic CVD and all-cause mortality was largely dependent on diabetes status. In those with type 2 diabetes mellitus (DM) over the age of 75, statins significantly reduced their incidence of both atherosclerotic CVD and mortality. This protective effect decreased beyond age 85 and no effect was seen in nonagenarians.

"Statins were not associated with a reduction in atherosclerotic cardiovascular disease or all-cause mortality in primary prevention in people without diabetes older than 74 years independently."

– Ramos et al.

In the absence of type 2 DM, patients over 74 years of age showed no effect of statins on atherosclerotic CVD or mortality. In the analysis of adverse effects of statins, none were found to be significant. The authors though point out that previous studies have identified increased risks but mostly with moderate and high intensity protocols while the dataset in this study represented mostly low profile protocols. They therefore cannot dismiss that some risk may exist.

This study adds actionable data from an examination of a specific subset of older adults that is often under represented in research. The authors also note that women were better represented in this retrospective study than is often found but is more representative of the demographics of this age group. The authors caution that their sample size for the 'very old adult' was limited and call for more research with this population given their increasing life expectancy.

Based on these results, the authors recommend individualizing treatment of statins in the old and very old adult population given the lack of benefit in the absence of type 2 DM and do not support the blanket use of statins in this population.


1. Savarese G et al. Benefits of statins in elderly subjects without established cardiovascular disease: a meta-analysis, J Am Coll Cardiol 2013;62:2090-2099.
2. Hunt D et al. Benefits of pravastatin on cardiovascular events and mortality in older patients with coronary heart disease are equal to or exceed those seen in younger patients: Results from the LIPID trial, Ann Intern Med 2001;134:931-940.
3. Miettinen TA et al. Cholesterol-lowering therapy in women and elderly patients with myocardial infarction or angina pectoris: findings from the Scandinavian Simvastatin Survival Study (4S), Circulation 1997;96;4211-4218.
4. Ramos R et al. Statins for primary prevention of cardiovascular events and mortality in old and very old adults with and without type 2 diabetes: retrospective cohort study. BMJ 2018;362:K3359.

# HEALTH PROMOTION DAYS

## Health Canada keeps a calendar with links to resources for health promotion days

**(https://www.canada.ca/en/health-canada/services/calendar-health-promotion-days.html)**

### Upcoming days for January and February include:

- January 30 – Bell Let's Talk Day
- Psychology Month – February
- February 4 – World Cancer Day
- February 15 – International Childhood Cancer Day
- February 27 – Pink Shirt Day
- February 28 – Rare Disease Day

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### Call for Contributions

At NP Current we want to reflect the needs and interests of nurse practitioners across Canada. We are seeking your ideas and contributions on any topics that would be of interest to the NP community. In each issue we will strive for a mix of content that addresses diagnosis, treatment, prevention and management of patients from the NP perspective.

We invite you to submit your ideas for new articles such as case studies, research, reports or newsworthy information from your practice or area of expertise or interest. Contact NP Current at melissa@npcurrent.ca and your contributions can help to inform and educate your peers.

NURSE PRACTITIONERS' ASSOCIATION OF ONTARIO

CAMAP
Canadian Association of MAiD Assessors & Providers

# MAiD Conference

Thunder Bay, ON

SATURDAY, NOVEMBER 10, 2018

Toronto, ON

FRIDAY, NOVEMBER 30, 2018

Sudbury, ON

WINTER/SPRING 2019

London, ON

WINTER/SPRING 2019

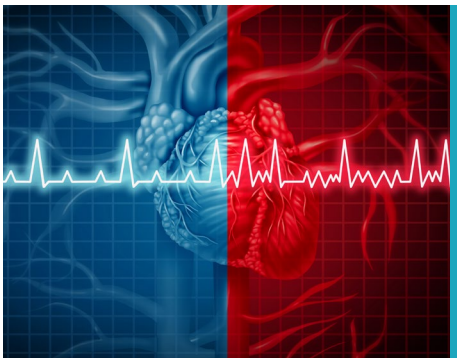
The Nurse Practitioners' Association of Ontario (NPAO) supported by the Ministry of Health and Long-Term Care with in-kind partnership from the CAMAP is pleased to announce this rich learning opportunity for those interested in or already providing Medical Assistance in Dying (MAiD).

This free workshop will review current standards and guidelines on being a first and second assessor, and provide hands on experience through a simulated MAID procedure. Speakers include Willi Kirenko, Nurse Practitioner in Independent Practice and Dr. Joshua Tepper, CEO, Health Quality Ontario.

This highly engaging, interactive, multidisciplinary educational event will be available in four regions in Ontario.

This Group Learning program has been certified by the College of Family Physicians of Canada for up to 9 Cert+ credits

For further information please visit **www.NPAO.org** or contact vmooney@npao.org



TIME TO TALK ABOUT...

# Screening for Atrial Fibrillation

## in the community setting

Atrial fibrillation (AF), the most common arrhythmia[1] accounts for 0.5% of ED visits, 1.5% of hospitalizations and 0.8% of deaths in the US.[2] AF, when untreated, increases the risk of stroke 3- to 5-fold.[3] Two types of AF are of particular concern, 'silent' AF and untreated or undertreated AF. [3] Overall prevalence of AF is near 1% with men, a slightly higher prevalence than women.[4] Prevalence also increases with age with rates up to 9% identified in those >80 years old.[4]

In the community setting screening is both cost effective and efficient.[5,6] Current practice standard is to palpate the pulse and to date only the European Society of Cardiology guidelines address screening.[3]

A study published earlier this year in the Canadian Medical Association Journal (CMAJ) by a Canadian group sought to address this gap and in addition, to consider the impact screening would have on appropriate treatment thus addressing 'actionable' AF.[3]

This prospective multicentre cohort study was conducted in 22 family practice settings across Canada. The study involved opportunistic screening for AF in those >65 years and included over 2000 patients.

The screening protocol in the study involved 3 separate screening methods:

- a 30 second pulse palpation,
- a 1 lead ECG uploaded to a server and interpreted by one of the study cardiologists,
- a BP check with a blood pressure device that takes 3 readings and reports AF if an irregular rhythm is identified in all 3 readings.

The staff performing the screenings were trained by study personnel and were blinded to any previous diagnosis of AF and those performing the pulse check were blinded to the results of the other 2 screening tools.

## Canadian Cardiovascular Society guidelines suggest anticoagulation therapy for all patients with atrial fibrillation aged 65 years and older.

Those with a negative screen on all three tools were considered negative for AF and no further testing was done. Those with a positive screen on any of the tools went on to have a 12 lead ECG; if the 12 lead did not show AF then a 24 hour Holter monitor was performed. A diagnosis of 'confirmed' AF was made if either the 12 lead ECG showed continuous AF or the Holter monitor showed at least 30 seconds of continuous AF. In accordance with Canadian Cardiovascular Society guidelines the participants with confirmed AF who were not currently on anticoagulant therapy were identified as having 'actionable' AF and

referred back to their family care providers for treatment.

The primary outcome under investigation was the specificity and sensitivity of the screening tools. In this regard, the authors found that both single lead ECG and the BP device had increased specificity and sensitivity with 72% and 48% fewer false positives respectively. Whether this improves cost effectiveness and efficiency will, per the authors, be addressed in a separate publication.

A secondary outcome of the study was the rate of those with actionable AF being treated per the Canadian Guidelines. The authors found an improvement with 0.7% increase in those with actionable AF being on non-vitamin K antagonist anticoagulant therapy within 90 days.

TIME TO TALK ABOUT…

# Screening for Atrial Fibrillation

Continued from page 9

AF is projected to become increasingly common in our aging population with one American prediction estimating that those with AF will nearly double by 2050.[4] Opportunistic screening in the family practice setting can identify those with silent AF as well as those who may be diagnosed but untreated.[3] This study offers evidence, from an initial investigation, of screening methods that can be undertaken in the community setting to increase the identification of those with silent AF and the appropriate treatment offered.

## Classification of severity of atrial fibrillation

- **Canadian Cardiovascular Society (CCS) Severity of Atrial Fibrillation (SAF) score**
  - 0 asymptomatic
  - 1 minimal effect on quality of life
  - 2 modest effect on quality of life
  - 3 moderate effect on quality of life
  - 4 severe effect on quality of life

Can J Cardiol 2011 Jan-Feb;27(1):7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2. Williams BA et al, Temporal trends in the incidence, prevalence and survival of patients with arial fibrillation from 2004 to 2016, Am J Cardiol 2017;120(11):1961-1965
3. Quinn FR et al, Diagnostic accuracy and yield of screening tests for atrial fibrillation in the family practice setting: a multicentre cohort study, CMAJ Open 2018;6(3):E308-E315.
4. Go AS et al, Prevalence of diagnosed atrial fibrillation in adults: National implications for rhythm management and stroke prevention: the AnTicoagulation and Risk Factors In Atrial Fibrillation (ATRIA) study, JAMA 2001;285(18):2378-2370.
5. Hobbs FD, Fitzmaurice DA, Mant J, et al. A randomised controlled trial and cost-effectiveness study of systematic screening (targeted and total population screening) versus routine practice for the detection of atrial fibrillation in people aged 65 and over. The SAFE study. Health Technol Assess 2005;9:iii-iv,:ix-x,1-74.
6. Fitzmaurice DA, Hobbs FD, Jowett S, et al. Screening versus routine practice in detection of atrial fibrillation in patients aged 65 or over: cluster randomised controlled trial. BMJ 2007;335:383-6.

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# Information for Authors

## Types of Contributions

We welcome all contributions that are of potential interest to nurse practitioners, including but not limited to the following categories:

**Original Research** – Please follow the standard format of scientific manuscripts with the inclusion of an abstract, introduction, methods, results, discussion and conclusion. Tables and figures must be submitted in an editable word file.

**Key Concepts** – Brief contributions on topics of interest to nurse practitioners, such as new therapeutic approaches or frequently encountered clinical conditions.

**Practice Perspectives** – An article that illustrates diagnosis, treatment or managment concepts, including innovative NP-led initiatives.

## Peer Review

Submissions are subject to a blind peer review. After initial review by the editor, submitted articles will generally be sent to two reviewers who will provide comments on the scientific rigor of the content and its suitability for our audience. The final decision on the acceptance of the submission rests with the editor of NP Current.

## Submission Length

All articles should be a maximum of 3000 words unless there is a prior discussion with the editor.

## Funding and Conflict of Interest Reporting

All authors must complete a funding disclosure and conflict of interest form.

## Ethics Review

Any studies involving human or animal subjects must have obtained appropriate approvals and consent.

## Submission Declaration and Verification

Submitted articles must not have been previously published (abstracts and theses excluded) or under consideration for publication in the same format elsewhere.

## Authorship

All authors must have made substantial contributions to the development of the article.

## Vaping in Youth

# A Wolf in Sheep's Clothing?

### What is vaping?

Electronic cigarettes, also known as e-cigarettes, are battery-powered devices that heat the e-juice liquid to a high enough temperature that it converts to an aerosol vapour and can be inhaled into the lungs and exhaled. The e-juice liquid is made of propylene glycol or glycerin, flavourings and may also contain varying levels of nicotine.[1] Figure 1 is an infographic created and distributed by Health Canada on the components of vaping.

### How prevalent is it?

The most recent Canadian statistics come from the Canadian Tobacco, Alcohol and Drugs Survey (CTADS) conducted by Statistics Canada in Canadians 15 years and over. In 2017, 23% of youth aged 15 to 19 and 29% of youth 20 to 24 had ever tried an e-cigarette.[2] These percentages drop when looking at use in the past 30 days to 6% of all 15-19 years olds and 6% of 20-24 year olds.[1] In comparison, the prevalence of youth who currently smoke is 8% in 15-19 year olds and 16% in 20-24 year olds.[1] Of note, 43% of youth ( 15-19) who vape are non-smokers.

**MYTH**

**Vaping is harmless**

According to Health Canada, the chemicals in vaping products are linked to health risks and the long-term effects are still unknown.[5]

Alarmingly, in the US, from 2017 to 2018, there was a 78% increase in current e-cigarette use in high school students and a 48% increase in children in middle school.[3] Overall, 20.8% of high school students reported using e-cigarettes in the past 30 days and 7.6% reported using regular cigarettes in the same time period.[4]

The reasons given by youth for why they started vaping are:[1]

- Novelty
- Flavour options
- Believe vaping poses no risk or less risk than cigarettes

In the CTADS, when asked about their perceived risk of using e-cigarettes once in a while, nearly 30% of youth felt there was no to slight risk and nearly 1 in 4 didn't know.[2]

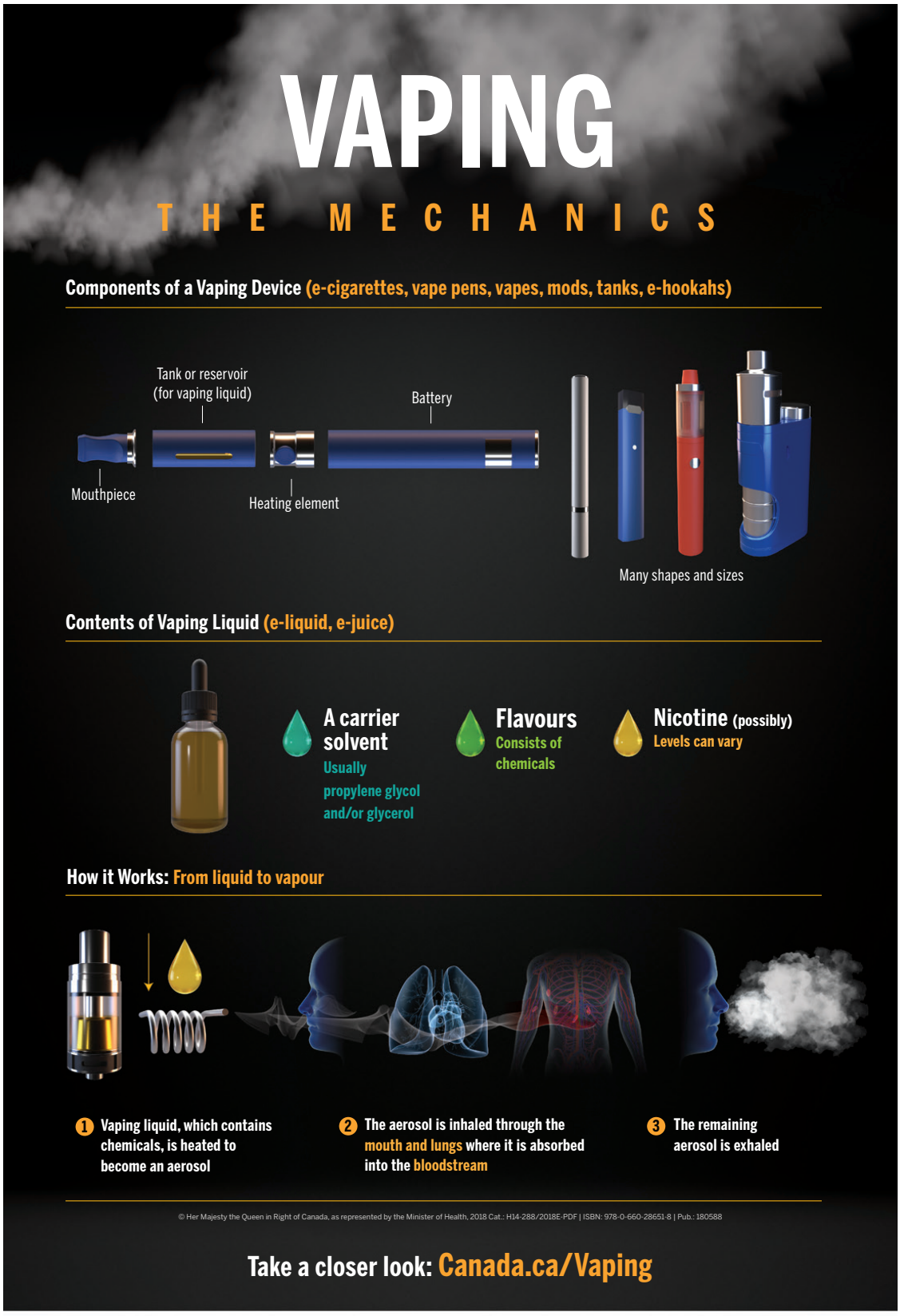



Figure 1: Infographic created and distributed by Health Canada

Continued on page 14

Vaping in Youth

# A Wolf in Sheep's Clothing

Continued from page 13

## What are the known risks?

The Centres for Disease Control and Prevention in the US, estimate that if smoking (both cigarettes and e-cigarettes) continues at the current rate seen in youth, 5.6 million of current US youth under the age of 18 will die prematurely from a smoking-related cause.[1]

There is a risk of addiction in youth who use e-cigarettes with nicotine as it is highly addictive.[5] Additionally, youth may become addicted to nicotine with a lower level of exposure than what is needed for adults.[5] Popular media has been reporting on stories of teens who are having difficulty stopping their use of e-cigarettes.

Nicotine has a detrimental effect on adolescent developing brains as it may cause reduced impulse control as well as cognitive and behavioural problems.[5]

… in the US, from 2017 to 2018, there was a 78% increase in current e-cigarette use in high school students…

There are also health risks related to the chemicals in the e-liquid vaping products. While many of the ingredients are ones considered safe for ingestion, these ingredients have not been tested as to whether they are safe to breathe in. Research has also found that when the e-liquid is heated up to create the aerosol vapours, new chemicals such as formaldehyde can be created by the high temperatures and unwittingly inhaled.[5]

## What is being done by the government to control vaping in youth?

The Tobacco and Vaping Products Act was passed into law in 2018 and included changes such as:

- Ban on the promotion of vaping products to youth

- Ban on the sale of vaping products to anyone under the age of 18
- Ban on lifestyle and testimonial type advertising and the promotion of products that appeal to under 18 group
- Legalization of nicotine containing vaping products


1. Ontario Tobacco Research Unit, www.otru.org
2. Canadian Tobacco, Alcohol and Drugs Survey (CTADS): summary of results for 2017, available online at: https://www.canada.ca/en/health-canada/services/canadian-tobacco-alcohol-drugs-survey/2017-summary.html#n2
3. Cullen KA, Ambrose BK, Gentzke AS, Apelberg BJ, Jamal A, King BA. Notes from the Field: Use of Electronic Cigarettes and Any Tobacco Product Among Middle and High School Students — United States, 2011–2018. MMWR Morb Mortal Wkly Rep 2018;67:1276–1277.
4. Centres for Disease Control and Prevention, Fact Sheet on Youth and Tobacco Use, available online at: https://www.cdc.gov/tobacco/data_statistics/fact_sheets/youth_data/tobacco_use/index.htm
5. Health Canada, Health Risks of vaping with nicotine, https://www.canada.ca/en/health-canada/services/smoking-tobacco.html


## Where can I direct my patients and their parents for more information?

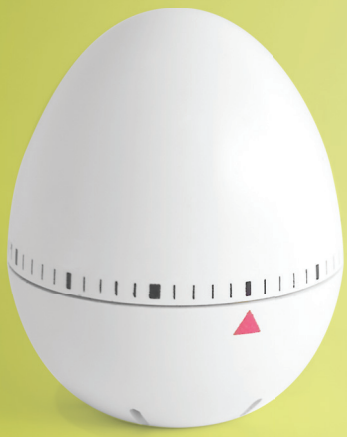
**British Columbia Interior Health Authority:**
Integrated Tobacco Program
Vaping and Youth Fact Sheet – available online at
https://www.interiorhealth.ca/sites/Partners/TobaccoResources/Documents/Vaping%20and%20Youth.pdf

**Health Canada**
https://www.canada.ca/en/health-canada/services/smoking-tobacco.html

## Where can NPs go for more information?

**University of Toronto's Ontario Tobacco Research Unit**
Provides extensive information for HCPs including online learning modules and webinars
www.otru.org

# WHAT ARE HER CONTRACEPTIVE PLANS?



## Is Kyleena® an option for her?

### The Society of Obstetricians and Gynaecologists of Canada (SOGC) recommendation:

*"Healthcare professionals should be careful not to restrict access to intrauterine contraceptives (IUC) owing to theoretical or unproven risks. Healthcare professionals should offer IUCs as a first-line method of contraception to both nulliparous and multiparous women."* [1†]

† Kyleena® was not included in the SOGC guidelines, as it was not available for consideration when the guidelines were published.

## Visit **Kyleena.ca/hcp** for more information

**Indication and clinical use:**
Kyleena® (levonorgestrel [LNG]-releasing intrauterine system (IUS) [19.5 mg]) is indicated for conception control for up to 5 years.[2]
- Kyleena® is not indicated for use in postmenopausal women.
- Safety and efficacy have been studied in women aged 18 and over.
- Kyleena® is not indicated for use before menarche.

**Contraindications:**
- Known or suspected pregnancy
- Current or recurrent pelvic inflammatory disease or conditions associated with increased risk for pelvic infections
- Postpartum endometritis or septic abortion during the previous three months
- Abnormal uterine bleeding of unknown etiology
- Congenital or acquired uterine anomaly, including fibroids, that distort the uterine cavity
- Uterine or cervical malignancy
- Known or suspected progestogen-dependent neoplasia, including breast cancer
- Cervicitis or vaginitis, including bacterial vaginosis or other lower genital tract infections until infection is controlled
- Cervical dysplasia
- Active liver disease or dysfunction
- Actual benign or malignant liver tumours
- Hypersensitivity to levonorgestrel or any of the other ingredients in the formulation or component of the container components of Kyleena®
- A previously inserted intrauterine contraceptive (IUC) that has not been removed
- Recent trophoblastic disease while hCG levels are elevated
- Bacterial endocarditis

**Most serious warnings and precautions:**
**Sexually Transmitted Infections (STIs):** Hormonal contraceptives **DO NOT PROTECT** against Sexually Transmitted Infections (STIs) including HIV/AIDS. For protection against STIs, it is advisable to use latex or polyurethane condoms **IN COMBINATION WITH KYLEENA®**.

**Cigarette smoking:** Increases the risk of serious adverse effects on the heart and blood vessels. Women should be counseled not to smoke.

**Uterine Perforation:** May occur with the use of intrauterine contraceptives including Kyleena®. If partial perforation (uterine embedment) or complete perforation occurs, Kyleena® must be located and removed and surgery may be required; pregnancy may result from partial or complete perforation. Delayed detection of perforation may result in migration outside the uterine cavity, adhesions, peritonitis, intestinal perforation and obstruction, abscesses and erosion of adjacent viscera. Both breast-feeding at the time of insertion and insertion up to 36 weeks after giving birth are associated with an increased risk of perforation. The risk of perforation may be increased in women with abnormal uterine anatomy or fixed retroverted uterus. To reduce the possibility of perforation, it is important to follow the recommended insertion technique. Inform patients before the procedure about the risk of uterine perforation. Kyleena® insertion should be delayed a minimum of 6 weeks after delivery or until uterine involution is complete.

**Other relevant warnings and precautions:**
- Efficacy is expected to be the same for post-menarcheal adolescents under the age of 18 as for users 18 years and older
- Hormonal contraceptives are not recommended as the contraceptive method of first choice in breast-feeding women
- Not for use as a postcoital contraceptive
- Breast cancer; breast self-examination should be discussed with women receiving hormonal contraceptives
- Caution in current or history of cardiovascular disease
- Hypertension; if a significant elevation of blood pressure in previously normotensive or hypertensive subjects occurs at any time during Kyleena® use, Kyleena® removal should be considered
- Caution in women with congenital or valvular heart disease at risk of infective endocarditis
- Diabetic patients, and those with a family history of diabetes, should be observed closely for changes in carbohydrate metabolism
- Menstrual bleeding pattern changes are common in the first few months of use; bleeding irregularities after prolonged use should be appropriately investigated
- Arterial and venous thromboembolism
- VTE may be temporarily increased with prolonged immobilization, major surgery, or trauma. Patients with varicose veins and leg cast should be closely monitored.
- Impaired liver function
- Jaundice; history of pregnancy-related cholestasis
- Caution in women with a history of severe headache or migraine with focal neurological symptoms
- Eye problems or discomfort including those relating to contact lens use
- Patients with a history of emotional disturbances, especially the depressive type, may be more prone to have a recurrence of depression while using Kyleena®. In cases of a serious recurrence, consideration should be given to removing Kyleena®, since the depression may be drug-related.
- Ectopic pregnancy; in the event of pregnancy, the relative likelihood of ectopic pregnancy is increased. Women should be informed of the risk of ectopic pregnancy, and subsequent risk of impaired or loss of fertility.
- Complete or partial expulsion of Kyleena®; partial expulsion may lead to a decrease or loss of contraceptive protection
- Ovarian cysts/enlarged ovarian follicles
- Increased risk of pelvic inflammatory disease (PID) during 20 days following insertion of intrauterine devices
- Sepsis
- Before insertion, the woman must be informed of the efficacy, risks, and side effects of Kyleena®; a thorough history and physical examination should be performed prior to insertion and 4 to 12 weeks following insertion and at least once a year thereafter, or more frequently if clinically indicated

**For more information:**
Please consult the Product Monograph at: https://omr.bayer.ca/omr/online/kyleena-pm-en.pdf for important information relating to adverse reactions, interactions and dosing information which have not been discussed in this piece. The Product Monograph is also available by calling 1-800-265-7382.

**References: 1.** Black A, *et al.* Canadian Contraception Consensus (Part 3 of 4): Chapter 7 – Intrauterine Contraception. *J Obstet Gynaecol Can.* 2016;38(2):182-222. **2.** Bayer Inc. Kyleena® Product Monograph. May 10, 2018.

Pr Kyleena®
LEVONORGESTREL-RELEASING INTRAUTERINE SYSTEM (19.5 MG)
5-year IUS. Low dose.

# In the News

## Current healthcare research

### Standardizing outpatient post-op pain management to reduce opioid use

A study conducted at Western University London Health Sciences Centre has shown that a standardized multimodal approach to outpatient post-operative pain management can reduce opioid use without a negative impact on post-operative pain scores.[1] The non-inferiority study looked at outpatients who had either laparoscopic cholecystectomies or open hernia repairs and was conceived after opioid prescribing for acute pain was identified as a priority area for improvement based on the 2017 Health Canada-Joint Statement of Action to Address the Opioid Crisis.

The STOP (Standardization of Outpatient Procedure) Narcotics intervention program consisted of four components:

1. patient education;
2. healthcare provider education (surgeons, anesthetists, residents, and nurses);
3. intraoperative multimodal analgesia and opioid reduction strategies;
4. postoperative multimodal analgesia and opioid reduction strategies.

The program was developed with input from surgeons, anesthetists, and patients. In the pre-intervention phase, 224 patients were prospectively evaluated, compared to 192 patients post-intervention. In addition to the primary endpoint of pain score, the group looked at use of NSAIDs and acetaminophen, whether or not a prescription for tramadol was


filled, use of the opioid medication and opioid refills, and disposal of unused opioids.

This study utilized a novel approach to opioids for the post-intervention patients: A limited (10 tablet) prescription was given to the patients, with a 7 day expiration, and patients were instructed to fill the prescription only if the non-opioid medications were not effective. This, coupled with patient education about compliance with the NSAID and acetaminophen, ensured adequate analgesia.

There was an overall improvement in pain control post-intervention, and a significant reduction in opioid use (from a median of 100 total morphine equivalents to 50 total morphine equivalents) post-intervention. Forty-five percent of patients filled their opioid prescription, and 33% of these patients did not take any opioids at all. Non-opioid medication use increased in the post-intervention group.

1. Hartford L, et al. Standardization of Outpatient Procedure (STOP) Narcotics: A Prospective Non-Inferiority Study to Reduce Opioid Use in Outpatient General Surgical Procedures. J Am Coll Surg 228:1;81-89.

# In the News

## Current healthcare research

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### Gluten-free children's foods are not a healthier choice


With an estimated prevalence of 1% worldwide, celiac disease is one of the more common chronic diseases. The increased availability of gluten-free (GF) prepared foods has been a boon for these people, but what are the nutritional implications for people without celiac disease? Are they "better for you" than comparable non-GF prepared foods? Charlene Elliott, PhD, of the University of Calgary Department of Communication, Media, and Film looked at this question, specifically for GF prepared foods targeted at children.[1]

Dr. Elliott examined prepared foods, other than candy or junk foods, that met at least one of several criteria that would identify them as marketed for children, such as: a product or brand name that contains "child" or "kids", links to children's television programming or movies, or packaging with premium offers, such as "free gift inside." She compared these children-targeted gluten-free foods to similar, non-GF children-targeted foods using the Pan American Health Organization (PAHO) Nutrient Profile Model, which looks at criteria such as excessive sodium, excessive free sugars, containing other sweeteners, excessive total fat, and/or excessive total saturated fat.

Overall, there were no substantial differences in nutrient profiles between the GF and non-GF foods targeted at children. GF children's foods were not nutritionally superior to other children-targeted foods. Dr. Elliott commented that, despite the "health halo" of GF foods, 88% of the prepared GF children's foods with a matched non-GF food could be classified as nutritionally unhealthy, compared to 93% for the non-GF version. These findings reinforce the importance of healthy food choices for children with celiac disease but also for the broader population, where parents may choose a GF children's food with the assumption that it is a healthier choice.

1. Elliott C. The Nutritional Quality of Gluten-Free Products for Children. Pediatrics 2018;142; DOI: 10.1542/peds.2018-0525.

### COPD patients have significant lung damage before they are symptomatic

In severe COPD, the majority of airflow restriction is due to the loss of small (< 2mm) conducting airways – the transitional and terminal bronchioles. The question of early loss of these airways has recently been investigated by a team led by Hyun-Kyoung Koo, Dragoş Vasilescu and Steven Booth at the UBC Centre for Heart Lung Innovation in Vancouver.[1]

Using high-resolution CT imaging and histology techniques, the team was able to visualize airway loss in patients with varying degrees of COPD severity as graded using the COPD GOLD (Global Initiative for Chronic Obstructive Lung Disease) staging. The study was a cross-sectional analysis of 34 patients, of whom ten were controls (smokers with normal lung function), ten had GOLD 1 COPD, eight had GOLD 2 COPD, and six had GOLD 4 COPD with centrilobular emphysema.

The researchers found that even in the mild (GOLD 1) COPD patients the number of terminal bronchioles was decreased by 40% compared to the smoking controls (p=0·014); this decrease was 43% in patients with moderate (GOLD 2) COPD (p=0·036). The number of transitional bronchioles was decreased by 56% in patients with GOLD 1 COPD (p=0·0001) and by 59% in patients with GOLD 2 COPD (p=0·0001).

The authors suggest that this early loss of terminal and transitional bronchioles may partially explain why trials involving patients with severe COPD haven't shown beneficial treatment effects. Their findings may also have implications for early treatment with disease modifying therapies for patients with mild to moderate COPD, before a decline in lung function is observed.

1. Koo H-K, Vasilescu D, Booth S, et al. Small airways disease in mild and moderate chronic obstructive pulmonary disease: a cross-sectional study. Lancet Respir Med 2018; 6: 591–602.

## Does high-dose folic acid prevent pre-eclampsia in women at high risk?

The role of standard-dose (0.4 – 1.0 mg/day) folic acid supplementation throughout pregnancy is well established. The use of higher doses of folic acid (4.0 mg/day) beyond the first trimester to prevent preeclampsia in high-risk women has been based on observational and laboratory studies. An international, randomized, phase III, double-blind, multicenter clinical trial led by researchers from the University of Ottawa and published this fall in the British Medical Journal, aimed to fill this knowledge gap. The FACT Trial (Effect of high dose folic acid supplementation in pregnancy on pre-eclampsia) did not show a prophylactic benefit for high-dose folic acid taken throughout pregnancy.[1]

The study enrolled women at high-risk of pre-eclampsia, defined as having pre-existing hypertension, pre-pregnancy diabetes (type 1 or 2), twin pregnancy, pre-eclampsia in a previous pregnancy, or body mass index (BMI) ≥35 kg/m$^2$. The 2301 participants were randomized to either 4 mg/day of folic acid (n=1144) or placebo (n=1157). The primary outcome measure was the development of pre-eclampsia after 20 weeks' gestation, with clinical significance defined as a 30% reduction in pre-eclampsia in the folic acid arm.

The proportion of women in the placebo arm who developed pre-eclampsia was 13.5%, compared to 14.8% of treated women who received 4 mg/day of folic acid. The investigators concluded that there was no benefit to continuing the high-dose folic acid beyond the first trimester and highlighted the need for continued research into strategies to reduce the incidence of pre-eclampsia.

1. Wen, White, et al. Effect of high dose folic acid supplementation in pregnancy on pre-eclampsia (FACT): double blind, phase III, randomised controlled, international, multicentre trial. BMJ 2018;362:k3478; http://dx.doi.org/10.1136/bmj.k3478

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# Key Concepts

## Chronic Fatigue Syndrome (CFS)/ Myalgic Encephalomyelitis (ME)

### What is CFS/ME?

CFS/ME is a chronic illness of suspected multifactorial, though poorly understood, etiology. ME impacts multiple body systems and can be devastatingly debilitating. One common key feature is the overwhelming fatigue following physical or mental activity that is not improved with rest.[1] However, ME is more complex than simple fatigue; it is a condition in which there is "pathological dysregulation of the nervous, immune and endocrine systems, with impaired cellular energy metabolism and ion transport being prominent features".[2]

ME is being investigated as both an immune and a neurologic disorder and the etiology is thought to be perhaps viral, environmental exposures, genetic or a combination of all of these.[3]

Diagnosis for ME is most often one of exclusion as there are no definitive diagnostic tests but rather there are sets of criteria that lead to a diagnosis of ME once other causal factors for symptoms have been ruled out. The most recent criteria published was done by a large international consortium using the Canadian criteria[4] as a starting point. The international consensus paper set out the criteria for ME as follows:

- postexertional neuroimmune exhaustion
- at least one symptom from three neurological impairment categories
- at least one symptom from three immune/gastro-intestinal/genitourinary impairment categories

- at least one symptom from energy metabolism/transport impairments.

Post exertional neuroimmune exhaustion is characterised by:

- Marked, rapid physical and/or cognitive fatigability in response to exertion, which maybe minimal such as activities of daily living or simple mental tasks, can be debilitating and cause a relapse.
- Post exertional symptom exacerbation: e.g. acute flu-like symptoms, pain and worsening of other symptoms.
- Post exertional exhaustion may occur immediately after activity or be delayed by hours or days.
- Recovery period is prolonged, usually taking 24 h or longer. A relapse can last days, weeks or longer.

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# Key Concepts

## Chronic Fatigue Syndrome (CFS)/Myalgic Encephalomyelitis (ME)

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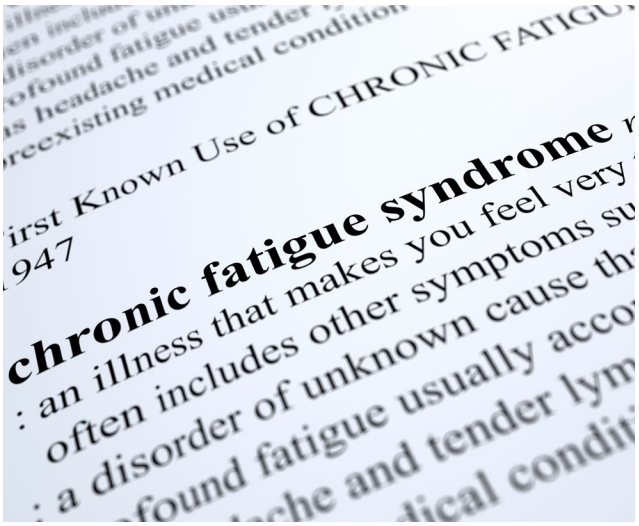


- Low threshold of physical and mental fatigability (lack of stamina) results in a substantial reduction in pre-illness activity level.

### How common is CFS/ME?

A 2017 Statistics Canada report estimates approximately 560,000 Canadians have CFS/ME.[5] This compares to other neurological conditions of ~77,000 Canadians living with multiple sclerosis and ~84,000[a] with Parkinson's disease.[1]

The 2014 Canadian Community Health Survey (CCHS) found that over 60% of those with CFS/ME were women and over 70% were between the ages of 18 and 64. CFS/ME is also more common in those with a family history of CFS/ME.

### Can it be treated?

- There are experimental treatments taking place as part of clinical trials (mostly in the USA) but there are currently no approved treatments for ME in Canada.
- Treatment is aimed at managing symptoms.
- Some people experience remission.

### What does my patient need from me?

- Empathy! Most patients diagnosed with ME have had a very long road of frustration in search of a diagnosis.
- The CCHS found that patients with CFS/ME indicated that they had visited their family practitioner >10 times in the previous year (more often than all but one patient population) and yet they indicated the greatest number of unmet health care needs.
- Awareness of the stigma often associated with CFS/ME.
- Understanding that there is varying severity of ME and those with the most severe symptoms can be fully dependent on others to perform daily tasks.
- Consider that for some with ME external stimuli can exacerbate symptoms, things like lighting, noise and touch for example. Consider diming lights, booking appointments at quieter times of the day. And be aware of the impact of touch. For some a simple touch can induce pain.

[a] In 2013-2014, Canadians aged 40 years and over

## What's in a name?

### CHRONIC FATIGUE SYNDROME or MYALGIC ENCEPHALOMYELITIS?

You will see both terms used in the literature with the disease called CFS, ME or CFS/ME. The use of the term CFS has been called out as problematic as it highlights simply fatigue versus the far broader symptomotology that is a hallmark of ME. Additionally, the term ME is more descriptive, pointing to the impact the disease has on both neurologic and musculoskeletal systems.

While ME has been used since the 1990s in the UK, it is a newer term in Canada and CFS or CFS/ME is still commonly in use.

- Understanding that ME, like many chronic illnesses, impacts not just the patient but whole families.
- Understanding that ME can impact all aspects of a person's life and can lead to loss of meaningful employment and social isolation given the hallmark effects of post exertional neuroimmune exhaustion.
- Be an advocate; your patient with ME will have to navigate a complex health care system.

## What do my patients need to know?

- CFS/ME is a real disease and "not in their head"
- They are not alone, over 500,000 people in Canada suffer from ME
- There are community supports available
- Their experience of ME may be similar to others or unique

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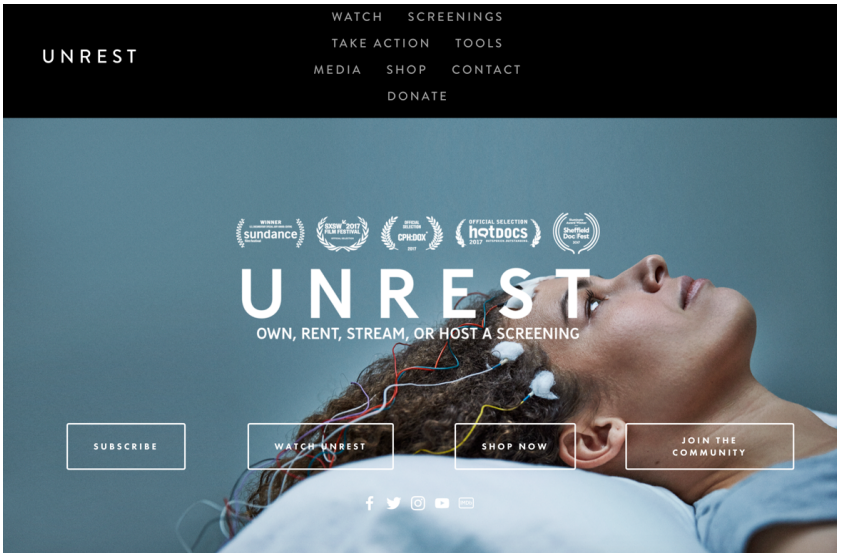
The film **Unrest**, released in 2017, chronicles the experience of a patient with CFS/ME and can give health care providers an insider's view of the patient experience. It is available on iTunes.

This multiple award-winning documentary has also been included in the curriculum of many medical schools in the US.
**https://www.unrest.film/cme/**



# Key Concepts

## Chronic Fatigue Syndrome (CFS)/Myalgic Encephalomyelitis (ME)

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### Where can NPs go for more information?

#### Canadian resources

The Canadian ME action network has a website with resources for providers and patients as well as information about support groups for patients

http://www.mefmaction.com/

The Centre for Disease Control and Prevention in the US recently launched a new website for health care providers and patients

https://www.cdc.gov/me-cfs/index.html

#### US resources

Stanford Medicine ME/CFS Intiative website includes information for patients

https://med.stanford.edu/chronicfatiguesyndrome.html

Columbia University Research Centre

https://www.mailman.columbia.edu/research/center-infection-and-immunity/mecfs-center


1. Public Health Agency of Canada, Chronic Fatigue Syndrome (myalgic encephalomyelitis), available online at https://www.canada.ca/en/public-health/services/chronic-diseases/chronic-fatique-syndrome-myaligic-encephalomyelitis.html
2. Carruthers BM et al, Myalgic encephalomyelitis: International Consensus Criteria. Journal of Internal Medicine, 2011;270: 327-338.
3. Sotzny F et al. Myalgic encephalomyelitis/chronic fatigue syndrome–evidence for an autoimmune disease. Autoimmune Rev 2018;17(6):601-609.
4. Carruthers BM et al. Myalgic encephalomyelitis/chronic fatigue syndrome: clinical working case definition, diagnostic and treatment protocols. J. Chronic Fatigue Syndr 2003;11:7–116.
5. Statistics Canada, Health Reports, March 2017.


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# Caught on the Web

This column monitors consumer advertising and social media for what your patients are seeing and reading about disease, treatments and vaccines.

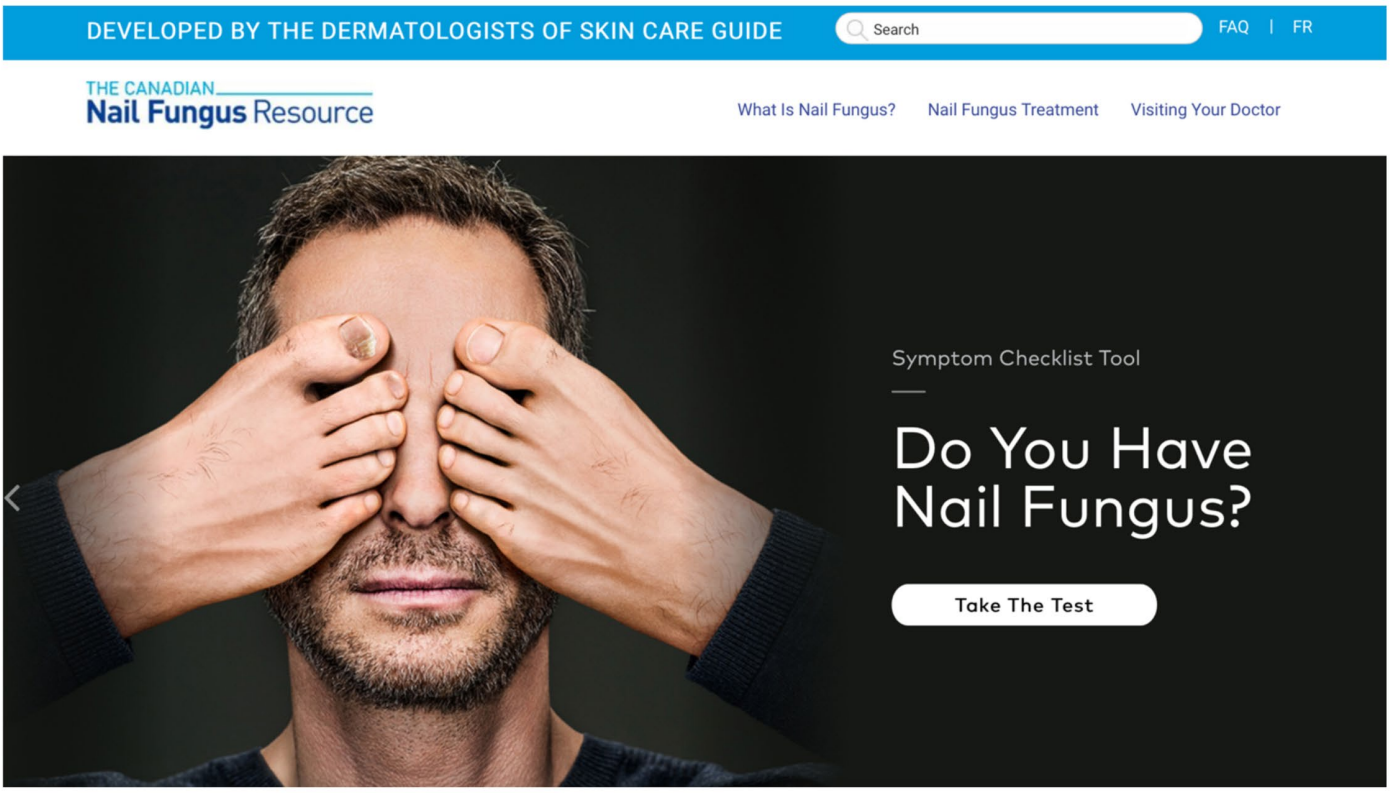
**Nailfungus.ca is an information website for patients with onychomycosis and is featured in an ad running on Canadian TV channels.**

## What is it?

Nailfungus.ca and the accompanying TV ad are components of a sponsored promotional effort. Nailfungus.ca is a website with content reviewed by dermatologists affiliated with Skin Care Guide.

## How comprehensive is this information?

The site provides patients with information on identification of onychomycosis and presents four topical and oral prescription treatment options – ciclopirox (Penlac®), efinaconazole



(Jublia®), itraconazole (Sporanox®) capsules and terbinafine (Lamisil®) tablets. Efinaconazole is available only from Bausch Health (formerly known as Valeant) while the other medications have both brand and generic versions available.

Based on the website content, efinaconazole will be an attractive option for many patients, since it is a topical medication. The website also highlights its low incidence of adverse events and risk of drug interactions. No comparisons are made for efficacy or duration of treatment and the website does not provide any information on other non-prescription treatments.

There is no comparision of cost, a consideration for many patients. The wholesale cost of efinaconazole is approximately $94 for a 6 mL bottle, and an online search of provincial formularies did not show public reimbursement, whereas the oral treatments itraconazole and terbinafine are available as generics and generally reimbursed.

## Why don't we know who is sponsoring this advertising?

Help-seeking advertisements discuss a disease or medical condition and direct the consumer to either a healthcare professional or a website or other information source for more information.

Health Canada regulations for drug advertising prohibit directly advertising a prescription drug to consumers, so a help-seeking ad for nail fungus treatments could not mention a specific treatment or even identify the sponsoring company by name. Usually there is a disclaimer that the ad is "brought to you by one of Canada's research-based pharmaceutical companies, but that is not the case with this one.

## Why does the sponsoring company not just advertise their drug directly?

In Canada, it is illegal to directly promote prescription medications to consumers.

By referring consumers to a website that discusses all the available prescription options, the sponsor is able discuss their product along with the other medications or treatment approaches.

## Where can I get unbiased, credible information that is not part of an advertising campaign?

### Canadian Dermatology Association

Information for patients on how to distinguish a nail infection, sources of fungal infection and prevention methods

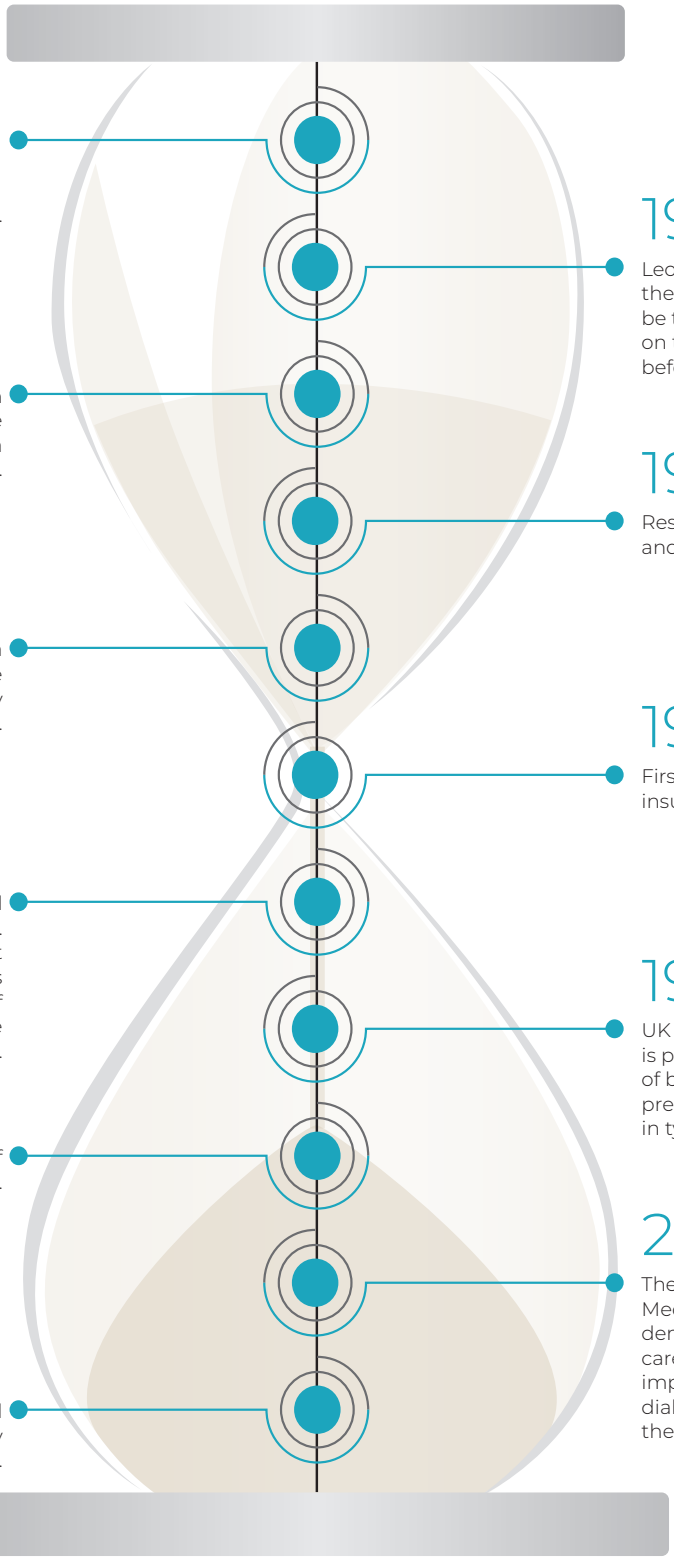
www.dermatology.ca

### HealthLink BC

Provides patient directed information with an overview of symptoms, causes and treatment options

https://www.healthlinkbc.ca/health-topics/hw268101

# Milestones in Diabetes



**1921**
Insulin is discovered by Frederick Banting and Charles Best at the University of Toronto.

**1922**
Leonard Thompson, aged 14, is the first person with diabetes to be treated with insulin; he goes on to live another 13 years before dying of pneumonia.

**1941**
Frederick Banting is killed in an airplane crash during the Second World War, flying a secret mission to England.

**1959**
Research identifies type 1 and type 2 diabetes.

**1971**
The first patent for a portable blood glucose meter is obtained by Anton Hubert Clemens.

**1982**
First biosynthetic human insulin is mass produced.

**1933**
Diabetes Control and Complications trial is published. This 10-year study shows that intensive therapy delays onset and progression of complications in people with type 1 diabetes.

**1998**
UK Prospective Diabetes Study is published and links control of blood glucose and blood pressure to improved outcomes in type 2 diabetes.

**2000**
Introduction of long-acting insulin.

**2014**
The New England Journal of Medicine publishes paper demonstrating improved care has led dramatic improvements in rates of diabetes complications over the last 20 years.

**2018**
Ipsos poll finds half of all Canadians (49%) have a family member with diabetes.

November 14 - World Diabetes Day
- Celebrated on Sir Frederick Banting's birthday

Sources: Diabetes Canada, www.diabetes.ca
American Diabetes Association, www.diabetes.org

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