

President's Message



Dear Colleague,

This is my final newsletter report as your President. During my term, drug shortages have become a critical issue. The CAS has been proactive in regards to this crisis. We have advocated on behalf of our members and their patients. We must continue to keep drug shortages in the public sphere as it is only then that government at the provincial or federal level will take action.

I encourage as many members as possible to join me in Quebec City from June 15 – 18 for our annual meeting. The scientific program has an impressive selection of topics, the social program has something for everyone and Quebec City will charm you.

I would like to thank you for the honour and privilege of serving as CAS President. Many days when I leave the operating room, I like to think I have at a minimum not done any harm and possibly have helped someone. I hope that is how I see my Presidency when I look back on this time.

I would like to thank the CAS Executive, Board, staff and the volunteers on the committees of the Society. The efforts of these individuals enable the CAS to represent and advocate for Canada's anesthesiologists.

Finally I would like to welcome Dr Patricia Houston as our incoming President.

Thank you for this opportunity.

Rick Chisholm

Congratulations!

CAS is pleased to announce the impressive roster of 2012 award recipients. The winners will be honoured at the Awards Ceremony during the Annual Meeting in Quebec City on Monday, June 18 (14:00 – 15:00). To read about the winners and their awards, see "An Invitation to the CAS Awards Ceremony" on page 2.



Courtesy of Quebec Tourism

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An Invitation to the CAS Awards Ceremony

Annual meeting delegates are cordially invited to attend the awards ceremony on Monday, June 17 at 14:00 at the Quebec City Convention Centre. Please join us to recognize those individuals who have made a significant contribution to anesthesia.

The Canadian Anesthesiologists' Society congratulates this year's three Honour Award winners: Dr Francesco Carli, Dr Mary Ellen Cooke and Dr Scott Beattie.

GOLD MEDAL AWARD (*an individual who has made a significant contribution to anesthesia in Canada through teaching, research, professional practice, or related administration and personal leadership*)

Dr Francesco Carli (Montreal, QC)

In recognition of outstanding contributions to anesthesiology and international educational initiatives in developing countries



CLINICAL TEACHER AWARD (*excellence in the teaching of clinical anesthesia*)

Dr Mary Ellen Cooke (Toronto, ON)

In recognition of outstanding commitment and dedication to the teaching of clinical anesthesia and inspiring excellence among Residents and students



RESEARCH RECOGNITION AWARD (*a senior investigator who has sustained major contributions in anesthesia research in Canada*)

Dr Scott Beattie (Toronto, ON)

In recognition of outstanding research in and major contributions to anesthesiology and perioperative medicine



Research Program Operating Grants

NEW INVESTIGATOR AWARDS OPERATING GRANTS

Abbott Laboratories New Investigator Award in Anesthesia \$20,000

Dr Stephen Choi

Sunnybrook Health Sciences Centre - Anesthesia, Toronto, ON

Optimizing pain and rehabilitation after knee arthroplasty (OPRA)



Baxter Corporation Canadian Research Award in Anesthesia \$20,000

Dr Katherine Taylor

Hospital for Sick Children - Anesthesia, Toronto, ON

Evaluating precision of therapy-milrinone



Canadian Anesthesiologists' Society Research Award \$30,000

Dr Andrea Rigamonti

St. Michael's Hospital, University of Toronto – Department of Anesthesia, Toronto, ON

Effects of perioperative low-dose pregabalin on post-craniotomy pain: A two-centre randomized controlled trial



Subspecialty Awards

CAS Research Award in Neuroanesthesia in memory of Adrienne Cheng \$10,000

Dr Bernard MacLeod

University of British Columbia - Anesthesiology, Pharmacology and Therapeutics, Vancouver, BC

Peripheral antinociceptive GABAB receptor activation: A new dimension of multimodal anesthesia



Dr Earl Wynands/Fresenius Kabi Research Award \$30,000

Dr Gregory Hare

St. Michael's Hospital, University of Toronto - Anesthesia, Toronto, ON



A prospective analysis of methemoglobin as a biomarker of tissue hypoxia during acute hemodilutional anemia in patients undergoing heart surgery

Open Award

Dr R A Gordon Research Award \$40,000

Dr Alain Deschamps

Montreal Heart Institute - Anesthesiology, Montreal, QC



Feasibility trial to maintain normal cerebral oxygen saturation (rSO2) in high-risk cardiac surgery (NORMOSAT Trial)

RESIDENTS' RESEARCH AWARD

CAS/LMA-Vitaid Residents' Research Grant \$7,500

Dr Manoj Lalu

University of Ottawa, The Ottawa Hospital - Anesthesiology, Ottawa, ON



In vivo assessment of a cellular clinical-grade immunotherapeutic for septic shock (CELLS2)

CAS Salutes Past Officers

The CAS will salute its Past Officers at the 2012 CAS Annual Meeting in Québec City and Dr Pierre Fiset, Immediate Past President and Dr Angela Enright, also a former President, will be in attendance.

"It is always fun to see old friends and catch up on what everyone has been doing. During the meeting proper, it can sometimes be difficult to find time together and some of the folks who attend the lunch do not attend the meeting because they are retired and this is our only chance to meet. It is always nice to see the 'significant others' too, as many of us worked together for years." Dr Angela Enright



Update On CEPD Survey

From time to time, CAS surveys its members to get input on services, educational programs, the *Canadian Journal of Anesthesia* and other relevant topics. In 2011, CAS sought feedback from members on the CPD, the Annual Meeting and other related topics. Following are some high-level results.

The Numerical Breakdown

- The top 3 topics that members want to be informed about:
 - Airway (64%)
 - Resuscitation (44%)
 - Acute pain (46%)
- 91% of respondents access primarily text-based resources (e.g., online journals and texts) for their current CPD needs
- If CPD was offered in the following formats in the future, respondents would be attracted as follows:
 - Podcast (62%)
 - Videocast (59%)
 - Webcast (49%)
 - Webinar (33%)
- Key barriers with web-based learning:
 - Unaware of available resources (60%)
 - Time (53%)

- Avenues for meeting CPD needs:
 - Annual meeting: "satisfied" or "very satisfied" (42%)
 - Journal: "satisfied – very satisfied" (43%);m for the Journal and the CPD modules. Regional meetings received a lower score (27%) with comments indicating respondents were unclear whether regional referred to geography or regional anaesthesia.

Ideas for Improving Relevance and Quality of Continuing Professional Education Offered by CAS

- Produce CPD modules more frequently, included web-based modules and in the *Journal*
- Continue to build on online learning opportunities
- Offer topics that are of relevance to everyday practice
- Encourage more regional and sub-specialty meetings throughout the year

Looking Ahead

The feedback received from this survey provided a wealth of information on which CAS can rely upon as it continues to provide members with learning and educational opportunities.

" My fashion choice may be questionable, but my support of the Canadian Anesthesia Research Foundation is not! Please make CARF one of your choices."



Dr. Richard Merchant
Clinical Professor,
Anesthesia, Pharmacology and Therapeutics,
University of British Columbia



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Report From CAS IEF

Sunday, June 17

Please join us:

CAS IEF SYMPOSIUM

Haiti Healthcare Recovery: Band Aid or Cure

The 2012 CAS IEF Symposium is chaired by Dr Alexandre Dauphin, Department of Anesthesia, McMaster University, Hamilton, ON with presentations from Dr Michel Clairoux, Department of Anesthesia, University of Sherbrooke, Sherbrooke, PQ, Dr Hossam Elsharkawi, Emergencies and Recovery, Canadian Red Cross, Ottawa, ON and Dr Fiona Turpie, Department of Anesthesia, McMaster University, Hamilton, ON.

CAS IEF RECEPTION AND DINNER

la Chapelle du Musée de l'Amérique française

Dinner will be followed with a talk by Dr Ronald George of Dalhousie University on "Kybele... For Safe Childbirth Worldwide".

We encourage you to join us for an informative and interesting evening. Please note that admission to the Symposium is free, but **you must pre-register to attend and dinner tickets must be purchased separately.**



CAS IEF Supports Rwandan and Palestinian Residents at 15th World Congress of Anaesthesiologists

Over 9,000 delegates travelled to the World Congress of Anaesthesiologists in Buenos Aires, Argentina in late March – the largest on record. CAS IEF is proud to have funded registration, accommodation and travel costs for five Rwandans and registration and travel costs for three Palestinian Residents who were delighted with the opportunity to attend the event as well as submit their posters at the meeting. CAS IEF is grateful to the American Society of Anaesthesiologists for the partial funding provided for this initiative.

During their time at the event, the Rwandans and Palestinians had ample opportunity to meet with people from other countries. As in previous years, they were invited to a reception sponsored by Baxter, which enabled them to meet people who had also been attendees in previous years. They shared stories about how their careers had been advanced by such opportunities and the importance of sharing in collaborative professional development activities.



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A special discount is available to CAS members who attend the 2012 CAS Annual Meeting in Quebec City.

For more information and to register, visit www.ANESTHESIOLOGY2012.ORG.

News from Research: Progress Report

2011 CAS Research Award in Neuroanesthesia (in memory of Adrienne Cheng)

Dr Alexis F Turgeon, FRCPC
Centre de recherche FRSQ du CHA
(Hôpital de l'Enfant-Jésus)
Université Laval, Québec, Québec,
Canada



Predictive value of biomarkers for prognosis in patients with moderate and severe traumatic brain injury: A systematic review and meta-analysis

Summary of Progress to Date

As planned in the grant proposal, we conducted a systematic review of three biomarkers (protein S-100 β , the neuron-specific enolase (NSE) and glial fibrillary acidic protein (GFAP)) to determine the association between their measured concentrations and prognosis following moderate and severe TBI.

We defined the search strategy and completed the electronic search in June 2011. A standardized data extraction form was developed and two independent investigators performed the study selection phase and data extraction over the summer. We pooled data from studies for each of the three studied biomarkers and conducted sensitivity analyses according to prior assumptions in September 2011. Three manuscripts reporting on the prognostic value of S100b, NSE and GFAP were drafted during fall 2011. We submitted two abstracts, those on the NSE and the GFAP, to the International Symposium on Intensive Care and Emergency Medicine (Brussels 2012). The manuscript on the S100b protein was recently submitted for publication. The manuscripts reporting on the NSE and the GFAP are to be submitted in Fall.

We are grateful to the CAS Research Committee for having selected our project as part of a large research program on the evaluation of prognosis in patients with severe TBI. This grant has also been very helpful in my career development as a clinician scientist.



In Memoriam



Dr Douglas Crowell – 1932-2012

A former CAS President (1977-78), Dr Douglas Crowell passed away on Monday, January 23, 2012 in Toronto. Dr Crowell was a member of McGill's Class of 1957 and practised anesthesia for 40 years at St. Joseph's Health Centre in Toronto. Active in various medical organizational affairs, he also had many hobbies and interests, including skills as a carpenter, accomplished violinist, choir member and outdoor enthusiast. Dr Crowell leaves behind his wife of 55 years, Grace, and several children, grandchildren, nieces and nephews.

Remembrance from a Colleague

"I worked with Doug for many years and always found him to be a caring and ethical physician. He was involved in many aspects of patient care from ICU to nursing education. He worked with Dr Bromage in Montreal and was enthusiastic about epidurals for pain relief in both the OR and labour and delivery."

Dr Liz Pyper



ASA'S 71ST NATIONAL SCIENTIFIC CONGRESS 29 SEPTEMBER - 2 OCTOBER 2012 HOBART



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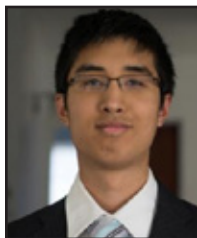
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2012 Medical Student First Prize Paper

Environmental Effects of Waste Anesthetic Gases

By Andrew Wei



Intersex fish, antibiotic-resistant bacteria, falling sperm counts, and contamination of drinking water: these are just some of the potential consequences related to the growing problem of pharmaceutical pollution. With the rising use and complexity of modern pharmacologic care, many investigators have focused their efforts on demonstrating that drugs administered to patients will inevitably find their way into the general environment, where they may mediate toxic effects on biological organisms and produce chemical contamination of air, water, and soil. The field of anaesthesia, with its widespread use of inhalational pharmacologic agents, has not been beyond such scrutiny. In fact, because anesthetic gases are excreted virtually intact and vented directly into the atmosphere, their contribution to global warming and ozone depletion has been studied since the 1970s.

The prospect of environmental damage caused by anesthetic gases was first raised by Fox et al. in 1975¹. At the time, the anesthetic compounds in common usage included N₂O and the volatile agents, halothane and enflurane. Subject to little *in vivo* metabolism, these drugs were usually released directly into the atmosphere following excretion by the patient. There, their effects were theorized to be two-fold: enhancement of ozone depletion and action as potent greenhouse gases. Research conducted in the 1980s suggested, however, that the environmental threat posed by these compounds was minimal^{2,4,5}; the volatile agents were deemed environmentally benign and anesthetic use of N₂O was found to contribute only modestly to ozone depletion and climate change. Indeed, despite their close resemblance to the ozone-damaging CFCs, the volatile anesthetic agents, with tropospheric lifetimes of only 2-6 years^{2,3}, proved too short-lived to diffuse significantly into the stratosphere, where the brunt of ozone damage occurs. Furthermore, despite their potency as greenhouse gases, worldwide production of anesthetic agents was deemed too small to exert a significant effect on global warming^{4,5}. Although these early results proved promising, the landscape of anaesthesia and environmental science has since shifted.

Today, the most commonly used inhalational anesthetics include N₂O as well as the newer volatile agents, sevoflurane and desflurane. Furthermore, worldwide production of anesthetic compounds is increasing to meet rising demand in developing countries, and a ban on

CFC production following the 1987 Montreal Protocol has greatly increased the relative contribution of anesthetic runoff to ozone depletion. Continued examination of the effects of current anaesthesia practice on the global environment is therefore warranted on the basis of recent changes in clinical science and environmental policy.

Like their predecessors, sevoflurane and desflurane contribute little to ozone depletion due to their short tropospheric lifetime^{3,6}. In addition, because they are halogenated solely with fluorine, they are considered to be even safer than previous volatile agents, which were halogenated partly with chlorine⁶. This is because the ozone-depleting potential of volatile anesthetics is dependent upon their ability to produce free chlorine radicals, which catalyze the destruction of ozone molecules. Production of free fluorine radicals, on the other hand, produces no significant ozone damage because free fluorine reacts strongly and rapidly with water to form HF, rendering it unavailable for further reaction with ozone⁷. The ozone danger posed by the newer anesthetic agents can therefore be considered close to negligible. A much greater impact on ozone depletion, however, is derived from anesthetic use of N₂O. The potential ozone-damaging effect of N₂O stems from its degradation into NO_x species in the upper atmosphere, which destroy ozone through a catalytic process very similar to that mediated by free chlorine radicals. Historically, the role of N₂O in ozone depletion was considered minor in comparison to the dominant effect of CFCs. However, the near complete abolition of CFC production following the highly successful Montreal Protocol has greatly increased the relative contribution of N₂O to this phenomenon. N₂O is now expected to become the foremost ozone-depleting substance throughout the 21st century⁸, with anesthetic use being responsible for up to 2% of total emissions^{6,11,12}. Fortunately, the popularity of this anesthetic gas has been waning in recent years^{9,10}, due partly to its uncertain clinical benefit, the availability of new highly-controllable inhalational agents, and its harmful ecological impact^{11,12,13,14}. Whether this will endure into a lasting trend remains to be seen.

The effect of anesthetic agents on global warming is harder to quantify, partly due to difficulty comparing different gases with varying properties and atmospheric lifetimes in an objective manner. Indeed, the relative contribution of different gases can vary heavily depending on the metrics used to compare them (such as GWP₂₀, GWP₁₀₀, GTP), the choice of which is often somewhat arbitrary¹⁵. Despite this shortcoming, in recent studies published by Ryan et al. and Sulbaek et al., the newest volatile anesthetic, desflurane, has been implicated as a much more potent greenhouse gas than previous compounds^{16,17}. According to Ryan et al., when calculated over a 20-year time horizon, desflurane pres-

ents roughly 3714 times the global warming potential of CO₂ (GWP₂₀ of 3714), compared to a GWP₂₀ of 349 and 1401 for sevoflurane and isoflurane, respectively. The impact of desflurane is further amplified by its low anesthetic potency relative to other volatile agents, thus requiring the administration of greater concentrations to achieve an equivalent clinical effect. Applying these numbers to clinical practice, 1 hour of desflurane anaesthesia delivered at 1 MAC and 2L of fresh gas flow is estimated to produce a climate impact equivalent to 186 kilograms of CO₂ emissions¹⁶. Such findings suggest that volatile anesthetics, and in particular the newer agent desflurane, may exert a more significant carbon footprint than once anticipated, although the proportion of total global warming attributable to these gases remains difficult to ascertain¹⁶. The effect of N₂O, on the other hand, is mixed; N₂O is itself a long-lived greenhouse gas, but its usage in anaesthesia allows decreased concentrations of the much more potent volatile agents. When used as a carrier gas for sevoflurane, N₂O increases the total GWP₂₀ of the gas mixture, but the opposite is true when N₂O is used with desflurane. Calculation on a longer 100-year time horizon, however, yields an unequivocal increase in GWP whenever N₂O is added as a carrier gas: a discrepancy that can be ascribed to its prolonged atmospheric lifespan¹⁶. With desflurane and N₂O demonstrating, respectively, very potent and very prolonged global warming potential, recent research seems to indicate that anesthetic gases may yet account for a small but significant portion of total greenhouse gas burden. The potential ecological threat they pose, therefore, cannot be taken lightly.

The scale of anesthetic pollution does not necessarily warrant drastic corrective measures, but the production of waste gases should nevertheless be mitigated as much as possible through reasonable and cost-effective means. Traditionally, the healthcare sector has been spared from the brunt of environmental scrutiny, because its services are deemed essential and because clinical necessity should rightly take precedence over environmental concerns¹⁸. However, with the growing medical sector exerting an increasingly large environmental footprint, greater efforts to reduce its ecological impact are justified wherever possible. Methods of minimizing the production of anesthetic waste gases need not come at a steep price and can be implemented within a framework taking into account both costs and patient safety. Simple and feasible solutions applicable to everyday anesthetic practice include minimizing fresh gas flows and avoiding the use of N₂O and desflurane whenever possible^{6,16}. Methods of reducing waste gas output that would require greater changes in common anesthetic practice include more extensive use of TIVA and closed-circuit anaesthesia systems⁶. Finally, new technologies under development that may be of use in the future include systems capable of recapturing waste anesthetic gases and experimental inhalational agents such as xenon^{6,19,20}. In the field of environmentalism, no intervention is too trivial to demand consideration and measures that decrease the environmental footprint of

anaesthesia ultimately contribute to ensuring the future sustainability of our healthcare system as a whole.

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Wait Time Benchmarks For Patients With Chronic Pain

Position of the Canadian Anesthesiologists' Society

In response to a request that CAS revise its previously published position statement to make the language more user friendly for patients, an updated version was recently forwarded to the Wait Time Alliance. The Alliance reports on the progress to date in achieving benchmarks established in the 2004 First Ministers' 10-Year Plan to Strengthen Health Care. The benchmarks cover cancer, cardiac care, diagnostic imaging, joint replacement and sight restoration.

Wait Time Benchmarks for Patients with Chronic Pain Position of the Canadian Anesthesiologists' Society

1. Many patients with chronic pain can be treated effectively by their family doctors using treatments that include medications available in the community. Unfortunately, many family doctors are reluctant to prescribe medications with proven efficacy in alleviating chronic pain (e.g., they may be concerned about the risk of addiction associated with the use of opioids). Some of the necessary information can be obtained from accessing best practice guidelines such as the Canadian Opioid Guideline, which has been approved by the regulatory Colleges. If family doctors were provided with proper training in the treatment of chronic pain and if they were adequately remunerated for the extra time that is often required to care for patients with chronic pain, the burden on pain clinics would be reduced and many patients would have a better quality of life.
2. The Canadian Pain Society reviewed the evidence concerning acceptable wait times for the treatment of chronic pain at multidisciplinary pain centers.¹ The Canadian Anesthesiologists' Society examined their findings and held informal consultations with anesthesiologists who are directors of pain clinics. It is apparent that there may be a marked decline in function in patients who suffer chronic pain for more than six months. The Society recommends that patients wait no longer than six months from the time of referral by their primary physician to their first assessment by a subspecialist in chronic pain management, with the proviso that shorter wait times should be targeted for certain conditions for which early intervention may be particularly beneficial (see Table). Because of lack of resources, many chronic pain subspecialists currently have long wait lists and may not be able to provide services within the recommended time intervals.

Recommended Benchmarks	
Condition	Wait time for first assessment by pain subspecialist after referral by primary physician
Nerve Damage After surgery or Trauma ^b	30 days
Pain Related to Disc Problems ^b	3 months
Cancer pain ^{b,c}	14 days
Exacerbations or Flare Ups of Chronic Pain ^b	3 months
Other types of chronic pain	6 months

^aThese wait times do not include subsequent waits for rehabilitation programs, psychology-based programs, or interventional procedures that may be deemed appropriate after the initial consultation with a pain subspecialist.

^bThese are conditions for which early intervention may provide particular benefits for the patient. They may be considered to be "sentinels": if services for these conditions can be consistently provided within the benchmarked time interval, then care is probably being provided in an appropriate timeframe for similar chronic pain conditions.

^cService within 14 days is recommended for patients who do not have access to a palliative service or in cases in which a palliative care team has asked for a specific procedure.

Reference

1. Lynch ME, Campbell FA, Clark AJ, et al.; Canadian Pain Society Wait Times Task Force. Waiting for treatment for chronic pain – a survey of existing benchmarks : Toward establishing evidence-based benchmarks for medically acceptable waiting times. *Pain Res Manag* 2007; 12: 245–8. Available from URL: <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2670734/> (accessed May 30, 2012).

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Definitions to Better Understand Chronic Pain Conditions as Outlined in the Table

Dr. John Clark, Professor of Anesthesia at Dalhousie University and Medical Director of Pain Services at Capital Health (Halifax, Nova Scotia) provides explanations about the following types of pain so that they can be better understood and appreciated by the public. He has written a number of chapters in the pain management textbooks *Managing Pain: The Canadian Healthcare Professional's Reference* and *Clinical Pain Management: A Practical Guide*.

Nerve Damage After surgery or Trauma

Neuropathic pain happens when nerves have been damaged. This can occur when one suffers trauma, has surgery or after some types of infection (i.e. shingles). If a nerve is damaged, this could lead to pain. When the word “acute” is used, it just means that something happened recently. If a pain lasts more than three or six months, then it is considered to be chronic.

Neuropathic pain can occur anywhere – it just depends on which part of the body has been injured. As an example, if you have a hernia repair in the groin you might have pain in the area of the upper leg or down to the pelvic area. Sometimes the pain will go away on its own and sometimes it can continue forever. After a person has a thoracotomy (an incision into the chest cavity) or a mastectomy (removal of the breast) pain can continue to be present up to 50 percent of the time. If someone has had his/her leg amputated, then there is about a 70 percent chance of having neuropathic pain after surgery.

Pain Related to Disc Problems

When a disc protrudes in your lower back, it can press on a nerve and give a person pain in your low back and down your leg. This is what people typically call sciatica. Basically it means you have a disc pushing into the area where the nerve leaves the spine. This leads to pain that will be typically felt in the back, the buttock and down the leg.

Anytime that you put pressure on a nerve you can cause damage, which can then result in pain that can become permanent. Pain might also be associated with numbness, pins and needles, loss of sensation or weakness.

Cancer Pain

There are many different types of cancers so there are many causes of pain associated with cancer.

As examples, a tumor mass can create pain by pushing on various types of tissue. If you have cancer in the bone and it is eroding the bone, you can get pain. If nerves are stretched by the tumor or are damaged by the tumor pain can occur. Pain can also occur because of the treatment for cancer; some drugs used to treat cancer can cause neuropathic pain and sometimes surgeries to cure a cancer can result in pain.

Exacerbations or Flare Ups of Chronic Pain

Those who suffer from chronic pain can experience situations where their pain may be increased for a period of time. This could be brought on by over-exerting oneself on a single day or via activities over several days. These are called flare ups or flares of pain, and to have a flare up or increase in chronic pain is not unusual.

There are some circumstances when providing interventions (i.e. nerve blocks or injections) can be helpful to persons with chronic pain. In this situation it would be reasonable that persons with chronic pain should not have to wait too long for these interventions so that missing activities or work is limited and maximum function is maintained.

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OTHER TYPES OF CHRONIC PAIN

There are three types of pain:

- Neuropathic pain– pain that results from damage to the nerves.
- Nociceptive pain – pain that arises from tissue damage, which includes bones, joints and muscles. Arthritis would be a good example of this type of pain.
- Combinations of neuropathic and nociceptive pain – this would include conditions such as fibromyalgia and chronic abdominal pain.

USEFUL LINKS

For more information concerning chronic pain, please click on the following links:

http://www.waittimealliance.ca/waittimes/chronic_pain.htm

<http://www.canadianpainsummit2012.ca/media/11445/final%20nat%20pain%20strategy%20for%20can%20121511%20eng.pdf>

For more information concerning cancer care, please click on the following link:

http://www.waittimealliance.ca/waittimes/cancer_care.htm

For more information concerning cardiac care, please click on the following link:

http://www.waittimealliance.ca/waittimes/cardiac_care.htm

To access the Canadian Opioid Guideline, please click on the following link:

<http://nationalpaincentre.mcmaster.ca/opioid/index.html>

