

## “State of the Art” Treatment of Osteoarthritis

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### Research by scientists in the *Tooling Up for Early Osteoarthritis: Measuring What Matters* research program

has shown that early on most osteoarthritis (OA) of the knee is not seen on X-rays – even OA that is detectable on X-ray may not have been diagnosed. The same is likely true for OA of the hip. While the topic of this article is not diagnosis, two quick points should be made:

- Appropriate physical examination of a joint is essential to early diagnosis
- X-ray diagnosis of hip or knee OA must be taken in a weight-bearing position – non-weight bearing X-rays are a waste of time and money.

### Non-Medication Treatment

Surprisingly, most patients referred to a specialist for OA have received little or no information on non-medication therapies. Surprising because OA diagnosis should be the domain of the primary care physician (family doctor) and non-drug treatments are often what patients seek as a first treatment approach. Research by the New Emerging Team is studying the effect of exercise and gait on causing and treating OA.

#### Orthoses

For OA of the toes, insoles are more effective and safer than any drug treatment. A good relationship with a professional orthotics fitter (“orthotician”) or an occupational therapist is needed. If the orthotics are not helping, ask the orthotician to try to modify them. Wedged insoles can also assist in knee OA. Bracing helps OA in one specific area or “compartment” (mainly medial) in the knee, but good braces are expensive. Again, knowing who is good brace fitter (physiotherapists do this) in your community is important. Taping can help pain in the patello-femoral (knee cap) joint. A well made splint helps with thumb OA (the first “carpometacarpal”).

#### Exercise

Exercise is increasingly used to treat OA of the knee, but it is still an under prescribed treatment option. Aerobic exercise as well as strength training around the knee joint can reduce pain and disability resulting from it. Aerobic exercise can include water exercise or swimming. Strength training can be as simple as quadriceps exercises or more formal programs. Post-exercise stretching and applying ice on joints with OA may reduce subsequent pain and stiffness. A graded exercise program is advised. The Arthritis Society of Canada offers Joint Works and Water Works in some communities. These are tailored to people with arthritis and are led by exercise leaders trained in the disease. The key to success for an OA exercise program is to maintain its frequency intensity, and to check in with the prescribing physician so that they can assess its effectiveness.

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#### Ideal Body Weight

Just as weight gain is associated with the development of knee OA, weight loss can improve pain. Weight loss as small as 10 to 15 lbs (4 to 7 kg) can cause improvement - it does not matter how the weight is lost, but it must be lost and no one is better positioned to oversee this than the primary care physician.

### Medication Treatments

Much is known about medication treatments in OA. While intensive research, including that

by New Emerging Team scientists, is looking for “markers” of potential targets to prevent or improve the cartilage and bone damage that is the hallmark of OA, no medication has definitely been shown to prevent OA or to repair the damage.

#### A step-wise approach

Acetaminophen (like Tylenol®) either on a fixed dose (up to 1.0 gm three times a day) or on an “as needed” basis remains the starting point for medication treatment. While non-steroidal anti-inflammatory drugs or “NSAIDs” are more effective than acetaminophen at controlling pain and inflammation, they can have more side-effects. If acetaminophen is ineffective, an NSAID can be used with or without the acetaminophen. If medications improve the pain, then non-medication treatments – such as exercise and weight loss – become easier to do and may even end up reducing the long term need for medications. For mild OA, NSAIDs can be used on an as needed basis, or to prevent pain e.g. before doing something that always causes pain such as going shopping, working in the garden, or playing a round of golf.

#### Safety issues

The withdrawal of the COX-2 selective medications (also called “coxibs”) rofecoxib (Vioxx®) and valdecoxib (Bextra®) because of cardiovascular side-effects has caused no end of heartache for physicians, pharmacists and patients, alike. Results from all of the previous research on rofecoxib and valdecoxib, and huge randomized trials of new coxibs have now clarified the issue. There are two key points to be aware of:

All NSAIDs and all coxibs currently available carry an increased risk of cardiovascular events. There is some suggestion that naproxen may have a slightly lower risk, therefore making it a

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## Today's research into osteoarthritis — the view from people living with it

For the millions of Canadians living with osteoarthritis (OA), research into disease prevention and management is critical. Arthritis research looks for answers to Canada's largest burden on the health care system and serves to guide good treatment and care by enabling our doctors – and ourselves – to better understand our disease and the impact of it across the spectrum of our lives. For that reason, we wanted to highlight projects underway in Dr. Gillian Hawker's **Pain and Fatigue in Osteoarthritis** and Drs. John Esdaile and Monique Gignac's **Tooling Up For Early Osteoarthritis: Measuring What Matters** research programs. Funding support for these two research programs comes from the Canadian Institutes of Health Research and the Canadian Arthritis Network.

## Impact of osteoarthritis on daily living

For people with osteoarthritis, the disease brings a radical change in the way they live their lives. They have to make tough decisions about what they have the strength and energy to do, prioritizing certain aspects of their lives and having to forgo others, yet to date, not a lot of research has gone into this area. One study coming out of the Tooling Up For Early Osteoarthritis research program is addressing this gap.

The research project, *Measuring What Matters: Participation in Everyday Life*, is examining the impact of osteoarthritis on important activities and roles such as paid work, the home, social life, hobbies, leisure activities and personal relationships and how this changes over the course of the disease. Led by research investigators Monique Gignac, Catherine Backman, Elizabeth Badley, Aileen Davis, Diane Lacaille and person with osteoarthritis and rheumatoid arthritis, Pamela Montie, this research will provide a unique perspective on how osteoarthritis effects the quantity and quality of time spent doing things that are valuable to people with osteoarthritis. This research will help to ensure that programs to address and manage OA are better suited to the needs and experiences of those living with the disease.



## Older peoples' attitudes towards taking pain medication: Are you Martha or Henry?

Martha and Henry grew up in the 1930's and 1940's so they're in their 70's now. People like Martha and Henry have been the subject of many studies by the researchers of the Pain and Fatigue in OA - New Emerging Team at Dr Gillian Hawker's Canadian Osteoarthritis Research Program.

Martha and Henry have lived through the depression years, those years when one does not buy things they don't need, when one saves new clothes for "Sunday Best", when one eats all that is on their plates and wishes for more, when one looks out for others who may be suffering, and when one spends an hour to pick up a dropped penny through a crack in the wooden sidewalk. In the depression years, Martha and Henry saved and saved, they were self reliant and they "made-do"! These habits served them well through the years, but now that Martha and Henry have OA, some of those habits may not always serve them so well.

Recent research at the Canadian Osteoarthritis Research Program shows that Martha and Henry may suffer needlessly from OA pain because they either do not take pain medication regularly, take less than the amount prescribed, or sometimes don't take it at all! People like Martha and Henry often belittle their pain saying it comes with age, or they state they have a high pain tolerance. Often, they make fun of their pain. They personify it and fight it. They avoid social outings and exercise because of it and fear they may become addicted to pain medication. They say they are not as badly off as they could be while they don't think their friends should have to suffer any pain. They feel that their pain is not life-threatening so it becomes part of their life. They feel proud if they have not given in to it. They say there is nothing they can do about it even though they have not experienced the possible pain relief that might be forthcoming by taking their pain medication (prescription or over-the-counter) as prescribed.

Because of the pain, Martha and Henry can't tie their shoelaces, can't comb their hair, can't walk more than a few steps and can't get enough

sleep. Pain from their OA has affected their social life and makes it difficult for them to exercise. As a result, they are unable to fully benefit from the physical, psychological and social benefits that are often realized if pain is controlled properly.

Further research on younger and more culturally diverse groups is necessary, but to benefit the current Martha and Henry subjects, researchers conclude that it is necessary to rethink how pain medication for OA is prescribed. The "take as needed" instruction may be one of the reasons that Martha and Henry don't take pain prescriptions or over-the-counter pain medicine efficiently. Researchers think that people with OA should be more closely observed for disabling pain by their clinicians. Perhaps the most important conclusion to be observed by Martha and Henry is that failure to follow treatment recommendations for pain medication means that they are achieving less than satisfactory pain relief. This results in significant loss in quality of life to themselves, their families and costs to the Canadian health care system. In order to provide an appropriate level of pain relief, people living with OA, like Martha and Henry, and the clinicians that treat them, need to address the reasons why pain medications are not taken in the ways recommended to provide the most benefit.



## The role of fatigue and sleep in osteoarthritis

People with pain and fatigue from osteoarthritis (OA) are too often told that they are “just getting older”. This leads to confusion and frustration among people with OA, and their health care practitioners, around how best to deal with these complaints. Researchers are trying to dispel this myth.

Fatigue is recognized as an important symptom in some diseases such as cancer or rheumatoid arthritis but it has not routinely been evaluated in OA. Like arthritis, sleep problems are fairly common among the elderly. Some of the risk factors that are related to OA (such as obesity, being female and increasing age) are the same things that increase one’s risk of having a sleep disorder. As such, we would expect sleep disorders to be more common among people with OA than they are in the general population.

Research from the Pain and Fatigue in Osteoarthritis research program suggests a link between fatigue, pain and underlying sleep disorders. Since late 2003, people with OA have shared their experiences of living with pain and fatigue with Dr. Gillian Hawker’s research team. What they have found is that among people living with OA, fatigue and sleep problems can have a significant impact on one’s life.

What has been learned about fatigue and sleep in OA from this research? So far, this research shows that:

- Living with OA pain can “wear you out” and leave you feeling tired and depressed.

- People with OA report fatigue that is similar to the levels of fatigue reported by people living with cancer.
- Some people with OA experience considerable daytime sleepiness yet are not aware of the problem.
- OA pain can make it difficult to get a decent night’s sleep, and that a poor night’s sleep can make it more difficult to deal with OA pain the next day.
- OA pain isn’t always the reason for a poor night’s sleep. Improvements in sleep quality have been seen in people who thought that OA pain was preventing a good night’s sleep when, in fact, an easily treated sleep disorder was to blame.
- There are limited tools to assess fatigue and sleep problems in OA, and the tools that are available, have not been widely used.

Above all, it’s become clear that it is important to continue investigating fatigue and sleep in OA. There is an enormous potential for improvement in the lives of people living with OA through greater understanding of how fatigue and sleep play a role in OA. It is hoped that greater understanding of the relationships between pain, fatigue, sleep and mood will push the development of new treatment strategies, targeted to individuals in the context of their families and the community as a whole.

## Understanding the changing role of pharmacists

Many people living with osteoarthritis have found that in addition to a great general practitioner and a great rheumatologist, their pharmacist is a key person on the health care provider team. Not only do people with the disease get their medications dispensed from pharmacists, pharmacists also provide important information about the medications people are taking or thinking about taking. *Pharmacist-Initiated Intervention Trial in OsteoArthritis (PHIT-OA)*, led by Principal Investigator, Carlo Marra, is studying the changing role of pharmacists in the provision of health care for chronic diseases such as OA. The purpose of this study is to find out if a screening program conducted by pharmacists to identify people with previously undiagnosed knee osteoarthritis is accurate and feasible. This research could have important benefits to those of us living with osteoarthritis, serving to reduce the debilitating impact of this disease on our lives. The findings of this research may contribute to earlier diagnosis and a timely referral to doctors and other required health care professionals. In addition, as osteoarthritis is a growing public health issue in Canada, the outcomes of this research may also benefit the health care system in general by diagnosing osteoarthritis before it becomes too advanced and requires more serious medical procedures such as total knee replacements or realignment surgeries.

## A tool to better understand research language

Another important initiative that has come out of the Tooling Up For Early Osteoarthritis: Measuring What Matters research program, and which is led by team members who live with arthritis (Jean Légaré, Jay Fiddler, Anne Fouillard, Pamela Montie and Cheryl Koehn) is the **Glossary for Consumers Involved in Health Research**. This glossary will be a vitally important tool for making sure that everyone interested in arthritis research development and results can all understand and benefit from them.

Written in easy-to-understand language, the Glossary for Consumers Involved in Health Research will help people living with osteoarthritis to understand the scientific language used in the development of research questions and methods of doing research, and reports and articles about research that appear in newspapers and on radio and television. But the glossary is not just for those living with the disease. The glossary is also a valuable tool for the research investigators who want to communicate more clearly and easily with their own research colleagues in other scientific fields, as well as with consumer collaborators, research subjects, funders and the public media.

If you would like your own free copy of the **Glossary for Consumers Involved in Health Research**, please visit the OsteoArthritis & You web site at [http://net.arthritisresearch.ca/oapublic/news/ newsletter\\_current.htm](http://net.arthritisresearch.ca/oapublic/news/ newsletter_current.htm)



## “State of the Art” Continued

reasonable first choice for an NSAID. The increase in cardiovascular events was not well recognized in the past because those taking these drugs may be at high risk anyway. Thus, detecting a small increase in the rates of heart attack or stroke requires randomized trials involving tens of thousands of patients (and costing more than \$100 million each). The two new coxibs – lumiracoxib (Prexige®) and etoricoxib (Arcoxia®) - have been studied in trials of 18,000 and 28,000, respectively. These are the two largest clinical trials ever conducted for arthritis medications and as a result more is known about their safety than any other on the market today.

Why the increased risk of heart attack, congestive heart failure and stroke occurs is uncertain, but that NSAIDs and coxibs increase blood pressure in some people – especially those with high blood pressure to start with – is unquestioned. Blood pressure monitoring is essential when taking any type of NSAID or coxib. Using the lowest dose of anti-inflammatory medication (or any medication) needed to control OA symptoms makes the best sense.

### The coxib advantage

Coxibs have one advantage over NSAIDs. They reduce the risk of serious GI side-effects such

as gastric ulcer by 50%. In those at high risk of ulcer or bleeding who really need the benefits of an anti-inflammatory, a coxib makes sense. The alternative choice is an NSAID with a proton pump inhibitor or an NSAID with misoprostol, but for the elderly, often on many drugs already, a multi-dose NSAID and a PPI or misoprostol is not as easy as a once a day coxib. For those at very high risk of bleeding a coxib and a PPI may be needed. Risk factors for peptic ulcers – including a bleeding ulcer – are being over the age of 60 (the risk climbs every decade after the age of 60), a past history of peptic ulcer or bleeding ulcer, a concomitant inflammatory arthritis and use of anticoagulants (generally considered a contraindication for NSAID or coxib use). Low dose ASA may reduce the benefit of a coxib. In this case, a PPI may be used. Currently, two coxibs are available in Canada – celebrex (Celecoxib®) and lumiracoxib (Prexige®).

### Other treatment options

Intra-articular corticosteroids provide short-term relief, especially in the presence of inflammatory symptoms or signs. Intra-articular hyaluronate injections also provide relief but require multiple joint aspirations and injections. They are probably best in OA limited to the knees where if improvement occurs, other drug treatment can be stopped.

## Thanks

The researchers and consumers involved in the “Tooling Up for Early Osteoarthritis” grant gratefully acknowledge the funding received from the Canadian Institutes of Health Research and the Canadian Arthritis Network.



The editors of OsteoArthritis & You thank Novartis Pharmaceuticals Canada Inc. for their unrestricted educational grant to support the printing of this issue. The content of this issue is free from influence from any public or private funding.

Special thanks to The Arthritis Research Centre of Canada for administrative and hosting assistance.



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