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The NSAID Drugs  
*Prescriptions and Prices*  
2004 through 1<sup>st</sup> Quarter 2005

An Analysis by Consumers Union and  
*Consumer Reports Best Buy Drugs*

June 2005

**Summary**

Doctors and consumers have switched to other pain relievers following the removal from the market of Vioxx in September 2004, and amid safety concerns surrounding two other popular arthritis/pain drugs – Celebrex and Bextra. The sharpest rise in prescriptions has been for Mobic, a relatively expensive brand-name non-steroidal anti-inflammatory drug (NSAID) that was widely advertised as a Vioxx replacement in the fall of 2004 and in early 2005. Mobic prescriptions more than doubled in the past six months – from 314,000 in September to 742,000 in March 2005. Mobic’s price also jumped substantially – by 9% – in the same period. Prescriptions for generic ibuprofen – a *Consumer Reports Best Buy Drug* in this class – also climbed steadily (but far more slowly) through March, rising 28%. Ibuprofen’s price increased only slightly over the six months as did the price of naproxen, another low-cost generic and also a *Best Buy*. Both drugs cost less than \$50 a month. Mobic costs more than \$100 a month. The average retail price increase for all NSAID drugs (brand and generic) for the six-month period was 2.4%. The surge in Mobic prescriptions likely reflects promotions and ads for the drug, but may also be due to the belief among some doctors that Mobic might be easier on the stomach than other NSAIDs.

**Introduction**

Controversy and concern has swirled around arthritis and pain relieving drugs for the past two years. The initial focus was on one group of pain relievers, called the COX-2 drugs. These included Vioxx, Celebrex and Bextra. These three are a subset of drugs in a class called the non-steroidal anti-inflammatories drugs (NSAIDs). Recent analyses and actions by the Food and Drug Administration (FDA) have now broadened the concern to this entire class of drugs, which includes ibuprofen, naproxen, diclofenac, etodolac, and Mobic. Nonprescription versions of some NSAIDs are also available – notably ibuprofen (Advil) and naproxen (Aleve).

The concern centers on the potential of these medicines to cause heart attacks and strokes, as well as the long-established risk they pose to the stomach (causing ulcers and

potentially fatal gastrointestinal bleeding). (Note: Aspirin is also an NSAID but has some very different properties; it has been shown at low doses to help prevent heart attacks.)

Based on accumulated and new data about risk to the heart, Vioxx was voluntarily pulled from the market in September 2004 by its manufacturer, Merck. This caused widespread alarm and triggered a re-evaluation of the safety of the Cox-2 drugs and a wave of events that culminated in an FDA review of the NSAIDs. On April 7, 2005 the FDA released an interim examination of the safety of NSAIDs and requested that the manufacturers of all drugs in the class take certain actions.

Stated simply, the FDA concluded that adequate data on the risks associated with the use of most NSAIDs, especially at high doses over long periods, was largely lacking. Given this gap in knowledge, and in light of recent studies on a few older NSAIDs and the newer COX-2 drugs, the agency decided to err on the side of caution and *ask manufacturers of all NSAIDs to put a warning on drug labels, inserts and boxes about potential risks to the heart with long-term use.* In the case of Bextra, the FDA asked the drug's maker (Pfizer) to remove the drug from the market. The company complied immediately. The agency also underscored the stomach ulcer and bleeding risk posed by all NSAIDs – including the remaining COX-2 drug Celebrex.

These events caught both doctors and consumers by surprise, and have caused considerable confusion. In that context, this brief report is the first in a series that will periodically evaluate and track NSAID prescriptions and prices. This report focuses on the period September 2004 to March 2005.

A separate report giving practical advice on the safe use of NSAID to consumers – taking the FDA's conclusions and new recommendations into account – is available at [www.CRBestBuyDrugs.org](http://www.CRBestBuyDrugs.org). The report aims to help people consider their options in treating pain and arthritis, and to choose the best and most affordable NSAID if they need one. *It points the way to significant savings for people now taking the most expensive NSAIDs who may be able to switch to less expensive ones.*

### **Findings – Prescription Trends**

NSAID prescriptions have been altered significantly by recent events. Vioxx's removal from the market shifted prescriptions initially to Celebrex and Bextra. But that quickly changed as safety concerns were raised about those two drugs as well. Prescriptions for both medicines declined sharply after October 2004. (See the graph on page 4.)

Prescriptions for Celebrex – now the only remaining COX-2 drug – plummeted by more than half, from a high of 2.1 million per month in October 2004 to 930,000 per month in February 2005. They rebounded slightly to about 1 million in March.

The other NSAIDs benefiting from Vioxx's demise and concern about Celebrex and Bextra are: meloxicam (Mobic), diclofenac (Volteran, Cataflam), ibuprofen, (Motrin, Nuprin), naproxen (Naprosyn), and nabumetone (Relafen).

Prescriptions for meloxicam (Mobic) increased most sharply. They soared 74% *in one month* – from 314,000 in September to 547,000 in October 2004. They then steadily climbed another 36% to 742,000 in March 2005.

Mobic is a relatively new and costly (see below) brand-name drug with no generic copy available. It was first marketed in 2000. A Direct-to-Consumer (DTC) ad campaign for Mobic in late 2004 invited previous Vioxx users to ask their doctor about Mobic.

Diclofenac (Volteran, Cataflam) prescriptions rose 27%, from 374,000 in October 2004 to 475,000 in March. Nabumetone (Relafen) prescriptions saw a significant 22% one-month bump from September to October 2004, from 259,000 to 316,000. They then rose steadily to 411,000 in March, for a total increase since September of 59%. Moderately priced generic versions of both diclofenac and nabumetone are available.

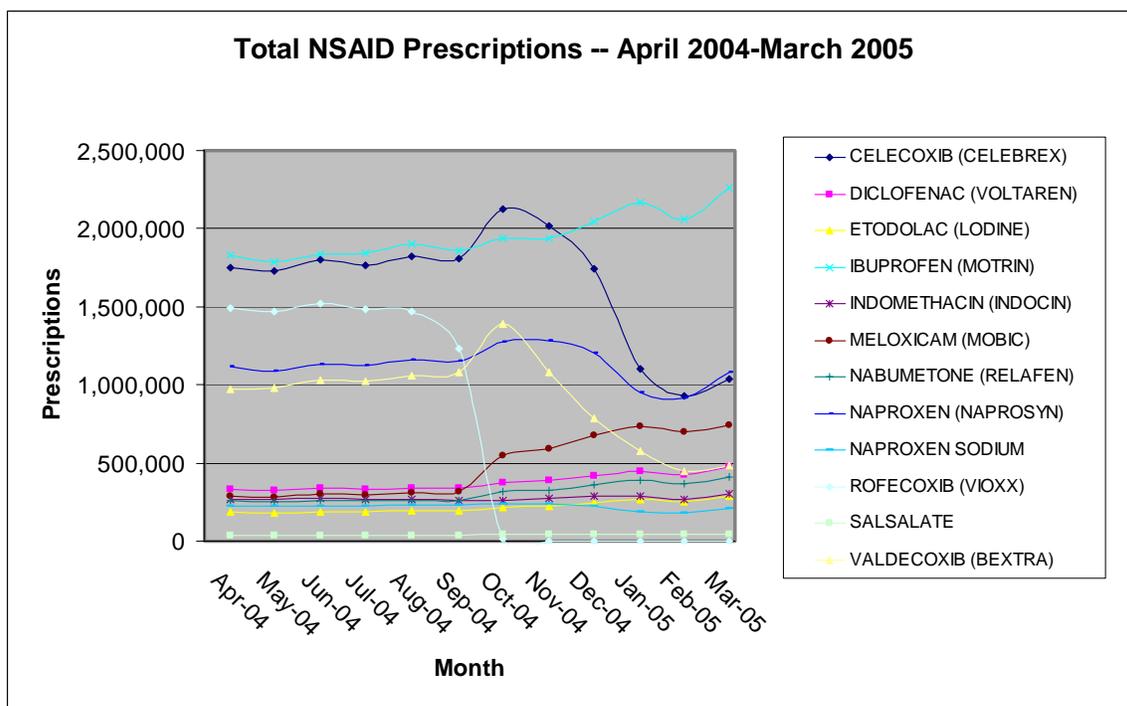
Naproxen (Naprosyn) and naproxen sodium prescriptions also briefly surged in the month following Vioxx's removal – from 1.38 million in September 2004 to 1.52 million (up 10%). But they declined sharply after the release in December of a study suggesting naproxen, too – like the COX-2 drugs – may raise the risk of heart attacks and stroke.

Those results were quickly questioned by experts, but naproxen prescriptions stayed depressed through February. In March, they began to rebound.

Prescription ibuprofen also benefited from Vioxx's demise, with prescriptions rising steadily, if slowly, in the last few months of 2004 and through March. Ibuprofen prescriptions climbed 28% from 1.8 million in September 2004 to 2.3 million in March 2005. The bulk of the increase was for low-cost generic formulations of ibuprofen. [Our data and analysis do not include sales of over-the counter formulations of ibuprofen (Advil, Nuprin) or naproxen (Aleve)].

Generic ibuprofen and naproxen are *Consumer Reports Best Buy Drugs* in the NSAIDs category. For a discussion of these choices, see the newly updated NSAIDs report at [www.CRBestBuyDrugs.org](http://www.CRBestBuyDrugs.org).

A third *Best Buy* NSAID– generic salsalate, a cousin of aspirin – appeared also to get a boost from Vioxx's removal and the COX-2 controversy. Prescriptions for the drug rose from about 36,000 in September to 41,000 in October, and then to 44,000 in March – a 22% increase over the entire period. Total prescriptions for salsalate remain marginal, however, compared to other NSAIDs – despite its track record, low-cost and preferred status by some buyers such as the Veterans Administration.



### Findings – Price Trends

The drug with the biggest prescription boost amid the COX-2 controversy – Mobic – is a relatively high priced brand-name NSAID. Mobic’s average price was also up sharply in the six-month period September 2004 to March 2005. The average retail monthly price for the 7.5mg form of the drug rose 6.7% – from \$104 to \$111. The average price for the 15mg version rose 10.6%, to \$157 from \$142.

The average retail price increase for all drugs (brand and generic) in the NSAID class for the six-month period was 2.4%. The price of 36 NSAID drugs (including varying dosage formulations) went up; 17 had a price decline and 10 had no price change.

In contrast to Mobic, the price of generic ibuprofen remained relatively flat over the six-month period. The average price of the 400mg formulation was up 8.3% (to \$26 from \$24) while the 600mg formulation declined \$1 (from \$30 to \$29) and the 800mg formulation stayed the same (\$30). Brand-named Motrin prices were up more steeply than generic ibuprofen. See the table below.

The price of generic naproxen was up between 4% and 5% while that of generic salsalate was up 8.3%. The average price of another generic drug benefiting from Vioxx’s demise – Diclofenac – was lower, by 1.6% over the period. The price of the brand version of Diclofenac (Voltaren), however, increased 10.4%, from \$192 to \$212.

The table below presents the average price changes from September 2004 to March 2005 for selected doses of all the drugs charted on page 4.

## Selected NSAIDs – Price Changes – September 2004 to March 2005

Generic Name and Dose <sup>1</sup>	Brand Name <sup>2</sup>	Ave. Price <sup>3</sup> Sept 2004	Ave. Price March 2005	Percent Change
Celecoxib 100mg	Celebrex	\$130	\$132	1.5%
Celecoxib 200mg	Celebrex	\$212	\$214	0.9%
Diclofenac 50mg	Voltaren,Cataflam	\$192	\$212	10.4%
Diclofenac 50mg	Generic	\$63	\$62	-1.6%
Etodolac 200mg	Lodine	\$150	\$170	13.3%
Etodolac 200mg	Generic	\$81	\$84	3.7%
Etodolac 400mg	Lodine	\$177	\$184	3.9%
Etodolac 400mg	Generic	\$75	\$74	- 1.3%
Ibuprofen 400mg	Motrin	\$30	\$34	13.3%
Ibuprofen 400mg	Generic	\$24	\$26	8.3%
Ibuprofen 600mg	Motrin	\$39	\$42	7.7%
Ibuprofen 600mg	Generic	\$30	\$29	- 3.3%
Ibuprofen 800mg	Motrin	\$51	\$53	3.9%
Ibuprofen 800mg	Generic	\$30	\$30	0
Indomethacin 50mg	Indocin	\$105	\$107	1.9%
Indomethacin 50mg	Generic	\$39	\$45	15.4%
Meloxicam 7.5mg	Mobic	\$104	\$111	6.7%
Meloxicam 15mg	Mobic	\$142	\$157	10.6%
Nabumetone 500mg	Relafen	\$113	\$125	10.6%
Nabumetone 500mg	Generic	\$70	\$70	0
Naproxen 375mg	Naprosyn	\$150	\$154	2.7%
Naproxen 375mg	Generic	\$42	\$44	4.8%
Naproxen 500mg	Naprosyn	\$189	\$187	-1.1%
Naproxen 500mg	Generic	\$48	\$50	4.2%
Salsalate 750mg	Disalcid	\$87	\$74	-15%
Salsalate 750mg	Generic	\$24	\$26	8.3%
Valdecoxib 10mg <sup>4</sup>	Bextra	\$113	\$117	3.5%
Valdecoxib 20mg <sup>4</sup>	Bextra	\$114	\$116	1.7%

1. Selected dose formulations. See the *Consumer Reports Best Buy Drugs* NSAIDs report at [www.CRBestBuyDrugs.org](http://www.CRBestBuyDrugs.org) for a full list of dose forms and the frequency of use per day. Drugs listed alphabetically.

2. “Generic” means this is the generic version, where one is available.

3. Prices reflect nationwide retail average, rounded to the nearest dollar; data provided by NDCHealth, a health care information company.

4. This drug was removed from the market in April 2005.

### **Data and Methods**

This report is based on data from NDCHealth, a healthcare information company. They come from NDCHealth’s Pharmaceutical Audit Suite (PHAST). The data are for prescription forms of NSAIDs only. We analyzed prescriptions for a select group of

prescription NSAIDs; not all NSAIDs are included. All data are for the United States only. For a complete list of the NSAIDs available in the U.S. market, see our updated *Consumer Reports Best Buy Drugs* report on NSAIDs at [www.CRBestBuyDrugs.org](http://www.CRBestBuyDrugs.org).

The average monthly prices we present reflect those paid by cash-paying consumers at neighborhood and chain pharmacies, and at the pharmacies of food and discount stores. Thus, they do not include commercially adjudicated third-party and Medicaid pharmacy claims transactions. The monthly costs are calculated based on a per-pill cost that standardizes for varying prescription sizes (30 day, 60 day, 90 day etc.) and dosing regimens. The monthly cost is then calculated based on an average 30.4 days per month.

The analysis in this report was conducted by Consumers Union and *Consumer Reports Best Buy Drugs* and was not done in conjunction with NDCHealth.

## **Discussion**

Doctors and consumers switched to other NSAID arthritis/pain medicines in the wake of Vioxx's removal from the market last September and the subsequent mounting concern over the safety of Celebrex and Bextra. The migration was largely split between a spike in the use of one expensive NSAID (Mobic) and a steady rise in prescriptions for one well-known, low-cost generic (ibuprofen). This split may be symbolic of trends in pharmaceutical prescribing in general. It is caught between continued hype and promotion surrounding many newer and more costly drugs and powerful pressure to lower costs and shift to generics where possible.

The preference for Mobic, for example, likely reflects the marketing campaign for the drug among doctors and consumers – both before and after Vioxx was removed from the market. Some of the print Mobic DTC ads contained coupons good for free supplies of the drug for a limited period. Some of these were full page or two-thirds page ads in leading newspapers. The switch to Mobic could also reflect the belief among some doctors that Mobic may be easier on the stomach (the advantage touted for the COX-2s) – a belief fostered by some discussion in the professional literature but not endorsed by the FDA, many experts, or supported by definitive clinical trial data.

At the same time, ibuprofen's large share of the market in general and its prescription growth after September 2004 likely reflects an increased sensitivity to drug prices and costs among consumers, insurers, and other payers in recent years. It may also be due to broad media attention to the NSAID class of drugs over the last year, with wide reportage of the inflated reputation of the COX-2s.

In that context, the FDA's April 2005 analysis provides valuable information for both doctors and consumers. The agency concluded that while some NSAID drugs may indeed be gentler on the stomach than others, there is not enough scientific evidence yet to say which ones, or to rate the drugs according to their gastrointestinal risk. (The exception is Vioxx, which FDA agreed had been shown to be associated with fewer serious stomach ulcers and bleeding.)

Likewise, the agency concluded that some NSAIDs probably pose less risk to the heart than others. But here, too, not enough evidence exists to say definitively which ones (again, with exception of the Cox-2s Vioxx and Bextra, both of which have been linked by studies more firmly to a higher risk of heart attacks and strokes under some circumstances.) The FDA was more equivocal on Celebrex's heart risk. It questions the strength and consistency of the evidence pointing to a heightened heart risk associated with use of the drug, but also acknowledges that evidence.

In addition, the FDA questions what it calls the "COX-2 hypothesis" – namely, that only COX-2 selective drugs are linked to heart problems and that other NSAIDs do not raise the risk. "It remains unclear to what extent the COX-2 selectivity of an individual drug predicts the drug's potential for an increased risk of adverse cardiovascular events compare to drugs that are less COX-2 sensitive," the FDA analysis stated. (Memo dated April 6, 2005, page 8, available at [www.fda.gov/cder/drug/infopage/COX2/NSAIDdecisionmemo.pdf](http://www.fda.gov/cder/drug/infopage/COX2/NSAIDdecisionmemo.pdf)) However, the agency specifically mandated that Celebrex's maker (Pfizer) put a warning on the drug's label which references the available data on the drug's heart risk. Other NSAIDs will not have to present such data on their labels.

Perhaps most importantly – and widely overlooked amid the focus on NSAID safety and risks when the announcement was made in April – the FDA analysis concluded that, "*controlled clinical trial data are not available to rigorously evaluate whether certain patients derive greater relief of pain and inflammation from specific NSAIDs compared to others or after failing to respond to other NSAIDs.*" This agrees with the overwhelming majority of studies and the consensus of expert medical opinion – namely, that all the medicines in the NSAID class are equally effective in relieving pain and other arthritis symptoms.

Thus, based on the existing evidence, prescriptions for costly brand-name NSAIDs – such as Celebrex and Mobic – would not seem to be justified at the present time except possibly in patients who fail to respond to other, less expensive NSAIDs. The *Consumer Reports Best Buy Drugs* report on NSAIDs selects three low to moderate-cost generic drugs – ibuprofen, naproxen and salsalate.

The events since September 2004 surrounding NSAIDs also underscore that doctors' and consumers' prescription drug preferences can be highly sensitive to media coverage of clinical developments, research studies, and FDA actions. In an era when millions more Americans are taking more medications for longer periods, that may be, on balance, positive. Consumers appear to be paying close attention to safety warnings about drugs in the media, and are prompted to contact their physicians. Amid heightened sensitivity to cost, our findings indicate that some doctors and consumers are poised to switch to less costly drugs.

On the other hand, the media spotlight can be disruptive. The news about naproxen's risks were widely covered and led to a quick decline in that drug's use that was most

likely unjustified. Some naproxen users may have switched to more expensive brand or generic medicines.

Finally, it appears that DTC drug ads aimed at consumers can become part of the “media environment” surrounding prescription drugs in the news. As appeared to be the case with Mobic, such ads can prompt doctors and consumers to switch to expensive brand drugs rather than to equally effective lower-cost drugs that are not advertised or promoted. Seven months before the launch (on January 1, 2006) of the Medicare Drug Benefit, Congress may want to take stock of this dynamic in the pharmaceutical marketplace.