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**Arthritis Drug Reduces Lung Cancer
Risk; One Step Closer to a Unified
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[The M. D. Anderson Hospital](#) reported that Celebrex, an arthritis medication, reduced precancerous markers in smokers. [Sloan-Kettering Hospital](#) in New York confirmed similar results. Neither study was structured to see if Celebrex reduced lung tumors (that takes 10+ years). However, experience with lung tumor markers in those who have stopped smoking indicates that when the markers go down, the incidence of tumors decreases. In medicine, we call a drug or treatment causing an unexpected benefit a “serendipitous” result, and they are frequently very powerful effects. That aspirin prevented heart attacks was first observed in a study of nurses having arthritis. Celebrex was developed to be a less stomach-irritating anti-inflammatory drug in the same class as Motrin, not a cancer preventive. Let me clear up some old Celebrex issues, and then move on to discuss anti-inflammatories and reducing the effects of aging.

Celebrex and Vioxx were released in 1999. They are both long acting anti-inflammatory drugs that have less stomach irritation than aspirin or ibuprofen because they work through inhibiting a protein called cox-2. They were a godsend to many arthritis patients. Reports of excessive heart attacks resulted in Vioxx being removed from the market in 2004. Even though Celebrex was biologically different from Vioxx, it fell under the same cloud of suspicion because they had similar action (once-a-day medication with reduced stomach irritation). However, analysis of the data published in *Annals of Internal Medicine* showed that, while Vioxx increased heart attacks risk by 300%, Celebrex actually reduced heart attack risk below baseline by a small percentage.

The inflammation theory of aging postulates that our major chronic diseases - arthritis, cancer, heart disease, and dementia - start with inflammation that goes unchecked. Further, if one could apply small amounts of anti-inflammatory foods or medications early in the disease process, these chronic diseases could be prevented. Since most unintended consequences in biology are detrimental, serendipitous findings are remarkable. So Celebrex, designed for joint inflammation, serendipitously may reduce lung tumors. Similarly statin drugs, such as Lipitor and Pravachol, which reduce vascular inflammation, also reduce colon cancer. These crossover effects, which appear speculative, may prove more predictable as our abilities to see the underlying genetics improve. Stay tuned for my next blog on mushrooms reducing breast cancer risk (*Mushrooms and Cancer*), where you may conclude “It can’t be that simple.” What we can surmise with epidemiology will one day soon be proven (or disproven) with genetics/genomics.