

It has been 15 years since I was a regular on KINS and it's a real privilege to be back and part of the Community Comment family. While I've been told I can talk about anything I like my intention is not to give random comments over the coming months or years but focus on a theme that I feel is very important for all of us.

My world, after thirty years in the classroom at Eureka High School, has focused on patient genetic/genomic education. I can guarantee you that we have come a long way since Mendel's pea plants and punnett squares that you either loved or hated while you were in high school. It has gotten a lot more complicated but definitely more interesting and relevant.

Conventional wisdom over the past half century has been that our health is 70% inheritance and 30% everything else but in fact it is just the opposite. The concept of genetic determinism – your genes determine your disease fate - is very much yesterday's science. A good formula to tuck away, if you like formulas, is $G + L + E = \text{Risk}$. Genome plus lifestyle plus environment equals your disease risk.

When I started my genomic education research several years ago there was little information available about how your lifestyle and the environment connected to your genome. To most of us it was a huge black box. Now everything seems to be genome this and genome that. There appears to be a "gene" for everything and anything. Don't believe it. Seldom does a gene work alone. There are definitely single gene diseases but they are rare, muscular dystrophy is a classic example. The field is now about the epigenome and gene expression, terms I hope you'll become comfortable with in the coming months.

While we're living longer we don't seem to be doing that longer living very well. Chronic diseases appear to be our Achilles Heel. Diseases that grow worse as we age are not allowing us to live our extended lives to the fullest. Today, almost half of American adults – 133 million of us - suffer from at least one chronic disease and for those on Medicare the numbers are even worse. More than half over 65 are being treated for multiple chronic diseases.

Many of us just accept that disease is just part of the aging process and because we're living longer the odds of getting sick will automatically increase. I think we need to reject that mind set.

When you spend a little time running the numbers you quickly realize that The Affordable Care Act is not affordable at all unless we place an emphasis on prevention. And prevention is what I'd like to focus on once I've built a reasonable genomic foundation for those of you who care to listen.

My challenge, and yes it is going to be a challenge, is to deliver an elevator speech about modern genomics once a month and leave you with at least one meme that will hopefully

stick. Here's my first one and it should give you a pretty good idea where I'll be heading over the next year or so.

If we are what we eat and the practice of medicine is not only the diagnosis and treatment of disease but also prevention then what we eat can either be the safest most powerful form of medicine or the slowest form of poison.