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Exploring Life Expectancy: Why Do Women Live Longer Than Men?

WHY MEN DIE FIRST: EXTENDING THE LIFESPAN

You are listening to ReachMD, The Channel for Medical Professionals. Welcome to Advances in Women's Health. Your host is Dr. Lauren Streicher, Assistant Clinical Professor of Obstetrics and Gynecology at Northwestern University Medical School, The Feinberg School of Medicine.

Welcome to Advances in Women's Health. I am Dr. Lauren Streicher, your host and with me today is Dr. Marianne J. Legato, a Professor of Clinical Medicine at Columbia University College of Physicians and Surgeons and Adjunct Professor of Medicine at Johns Hopkins Medical School. Dr. Legato founded the partnership for gender-specific medicine at Columbia University in 1997 and is the editor of the first textbook on Gender Medicine, Principles of Gender Specific Medicine. Today, we are talking about how human biology deferred in men and women and specifically the impact of gender on lifespan.

DR. LAUREN STREICHER:

Welcome, Dr. Legato.

DR. MARIANNE J. LEGATO:

Well. Thank you so much for asking me.

DR. LAUREN STREICHER:

Now, across the industrialized world women still live 5 to 10 years longer than men and among people over 100 years old, 85% are women and we know that while most women die of heart disease and the average they do so around 10 years later than men. So why do women die of heart disease later than men?

DR. MARIANNE J. LEGATO:

Well, that is one of the most important and ignored health problems of our time, which is why does coronary disease start at least 10 years earlier and sometimes in the mid 30s in men whereas women in general get a pass if you will until their menopause when estrogen production drops off. The fact is that women do live longer than men with more disability, but certainly men at all ages, which is interestingly, die before women. So I think we should be paying a lot of attention to why this much earlier onset of coronary disease in men. Men with coronary disease three quarters of them die by the time they are 65. So I think this is a huge health issue.

DR. LAUREN STREICHER:

And do you think there is a role of testosterone as long as we are talking about hormones estrogen is not the only hormone. Does testosterone impact on this at all?

DR. MARIANNE J. LEGATO:

Well, I think and so far as it contributes to lower a HDL or good cholesterol level yes, but and so does risk taking and ignoring symptoms all of which are possibly at least in part a function of high testosterone levels when men are younger.

DR. LAUREN STREICHER:

Now, when you are talk about risk taking, are you talking about risky behavior resulting in dying from an accident or a different kind of risk?

DR. MARIANNE J. LEGATO:

Well, I am talking about smoking, excessive drinking, not enough sleep, and exposure to all kinds of intercurrent infections, you know men suffers 7/10 most common infections much more commonly and severely than women do including tuberculosis. So, I think the risk taking behavior of men does contribute to their earlier onset of coronary disease, but I think it is more fundamental than that and it is not just hormonal. The reasons for it remain obscure and when we thought that estrogen protected women as you probably remember as well as I do, we did a clinical trial of giving men estrogen to see if we could prevent heart disease and in fact with such a high dose that it was so harmful that we had to close the trial and we have not looked at that since that time.

DR. LAUREN STREICHER:

So did the trial go long enough to get any data or just we just picked out lives?

DR. MARIANNE J. LEGATO:

No, no, people had unfortunately there were some deaths connected with the trial, so.

DR. LAUREN STREICHER:

What about the role of iron deficiency and cell aging. My understanding is that there is some data that suggested increase life expectancy of women is related to relative iron deficiency from years of menstruation. What you think about that?

DR. MARIANNE J. LEGATO:

I think that is probably nonsensical, but there are data to suggest that might be the case and what the mechanism is, is obscure. So, I really do not put much credence in that.

DR. LAUREN STREICHER:

Which is good because I think we are starting to see a lot more menstrual suppression with hormonal contraception and it is nice to know that that is not going to have an impact on life expectancy. Do you think there is a genetic advantage, something on the X-chromosome?

DR. MARIANNE J. LEGATO:

Well, the fact that there is a double X in women in spite of the fact that one of those X-chromosomes is incompletely silenced and made ineffectual in the course of normal female development. There is a

reserve on that second X that may contribute to their longevity and it is said that women, who survive longest have the favorable consolation of genetic equipment on that X-chromosome that contributes to their longer lives compared to men.

DR. LAUREN STREICHER:

Is there anything specific that has been identified on the chromosome?

DR. MARIANNE J. LEGATO:

No. Unfortunately, you know, we are just at the dawn of human genomic description and manipulation.

DR. LAUREN STREICHER:

And one could only imagine the impact of identifying something in terms of longevity for both genders. You know, suicide of course has a major impact on life expectancy. Is it true that men who attempt suicide are more likely to succeed than women?

DR. MARIANNE J. LEGATO:

Yes. Absolutely.

DR. LAUREN STREICHER:

Why are they more serious about it or they do different methods? Why are they successful?

DR. MARIANNE J. LEGATO:

They use different methods. In general women use pills and make many more unsuccessful attempts to kill themselves. They usually do not take enough or they do not use more definitive things like guns. Men are more likely to use guns and particularly the police, for example, who commit suicide in excess compared to the general population and do so with their own guns.

DR. LAUREN STREICHER:

I did not know that. How much of longevity in both men and women is determined by environmental factors of the post of genetics?

DR. MARIANNE J. LEGATO:

Well, I think that it has been said by thoughtful people that just to attribute everything to genes is a reductionist or simplistic view. We really do not understand the genome completely obviously, the so called junk DNA, that we used to discard and say there is no purpose of this has turned out to have important regulatory functions for example, but the interaction between genes, sex, because the same genes are expressed differently in men and women in heart muscle, in fat and brain, interestingly enough that was paper was published by Yang in 2006. So, sex impacts the way genes are expressed, hormonal levels at any given time in life, and the environment all interact in complex ways to determine phenotype. So it is not as simple, I have a mutation let's excise it or replace that gene and I will be fine and I think unfortunately, this plethora of new businesses in which you send \$1000 and a swab of your DNA and you are told exactly what the future holds are really exploiting the public.

DR. LAUREN STREICHER:

I am not familiar with those businesses.

DR. MARIANNE J. LEGATO:

There are 1300 of them as I am giving this interview.

DR. LAUREN STREICHER:

And what kind of fee does someone have to pay in order to get that kind of information?

DR. MARIANNE J. LEGATO:

Between \$1000 to \$1300 is about the medium fee and you can get a description of your genome, but what it means and whether or not, in fact, you will actually have the diseases that the genomic description infers that you might have is completely unclear.

DR. LAUREN STREICHER:

So we talked a little about hormones and behaviors and risk taking, what other gender specific factors impact on life expectancy?

DR. MARIANNE J. LEGATO:

Societal conditioning of men. In my recent book, Why Men Die First, I devote a chapter to what men pay for the jobs if they are asked to and do do without complaint and what sports extracts in terms of morbidity and mortality. Men are socialized to kind of suck it up, ignore pain, soldier on, and particularly for young men make their bones as the saying goes and prove that they are, in fact, manly and capable

of deeds of daring and risk taking. So, I think that this socialization of men and asking them to do the most dangerous jobs in society contributes certainly to their earlier death. Construction workers, especially, what are called the iron workers those men, who prowl the steel beams many, many, many feet above the street level who fall to their death is not uncommon. I haven't heard of any women, but there has been an epidemic of construction worker death due to falls, window washers, and construction workers in New York City for example.

DR. LAUREN STREICHER:

So, would you hypothesize that as more women become like men, if you well in terms of the jobs that they do and sports and all that, there was <_____> narrowing of this gap?

DR. MARIANNE J. LEGATO:

Yes and I think that, for example, girl soccer gets more and more physical and more and more games are being played there are more sport injuries that the young girls and women are exposed to. As we send women to war, as one young first lieutenant said to me who was in Iraq, there is no front line even though I am in an air-conditioned trailer doing troop movement and supply logistics, I could be bombed at any moment. So, I think job choices and job assignments are very important reason why men have a shorter lifespan. There was a very interesting article on the paper to me at least yesterday of a shipwreck in the middle of icy seas in which five men died and four lived only a short time because no help could be gotten to them in time. There had been a fire or flood in the hold of the ship and the whole crew was destroyed and this is not uncommon in deep-sea fishermen for example, and in men who go to sea are isolated from medical care or rapid help and die because there is no help available.

DR. LAUREN STREICHER:

And we will start to see this more with women as well?

DR. MARIANNE J. LEGATO:

If women are enrolled in the same situations, absolutely yes.

DR. LAUREN STREICHER:

It's not just how long we live, it's the quality of life that also needs to be considered. We know that women are at greater risk for developing Alzheimer's, for example. I would love to hear your thought, is it worth adding on an additional five years if they are not quality years?

DR. MARIANNE J. LEGATO:

Well, everyone asks that and it's solely a question of how you live. Some families, who can and do elect to keep their loved ones at home even with "Alzheimer's or dementia" have a tremendous amount of satisfaction in doing that although it is stressful in some regards and the end of life is not so dire. Those people who are penniless in warehouse and institutions where their illnesses and disabilities are not really expertly addressed with physiotherapy and also with the input of affectionate care don't do so well, so I think it depends you pay your money if you will and you takes your choice, would you like to live with dementia and osteoporosis and all of the ills that beset older women or do you choose the shorter lifespan while you are still functional?

DR. LAUREN STREICHER:

I would like to thank my guest, Dr. Marianne Legato, who has given us new insight into the effect of gender on life expectancy. I am Dr. Lauren Streicher. You are listening to ReachMD, The Channel for Medical Professionals. For complete program guide and podcast, visit reachmd.com. For comments or questions, call us toll free at (888 MD-XM157).

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DOCTOR:

So Rachel, now that you are past menopause and we have determined you have osteoporosis, I would like to start you on prescription only Evista, raloxifene hydrochloride tablets.

RACHEL:

Why Evista?

DOCTOR:

Because it's the only medicine that reduces the risk of osteoporotic fractures and invasive breast cancer in women like you. It's important to note that although Evista does not treat breast cancer, prevent its return, or reduce the risk of all forms of breast cancer.

RACHEL:

Am I really at risk for invasive breast cancer?

DOCTOR:

Based on my risk assessment, you may be. Some risk factors for breast cancer include advancing age, family history, and personal history.

RACHEL:

So, even though no one in my family has ever had breast cancer and still at risk for other reasons including my advancing age?

DOCTOR:

Exactly and I think the benefits outweigh the potential risks for you. It's the one medicine that treats osteoporosis and reduces the risk of invasive breast cancer in postmenopausal women with osteoporosis. Individual results may vary, of course, but that's exciting news.

RACHEL:

Exciting, I have to take your word on that doctor.

DOCTOR:

Evista increases the risk of blood clots and should not be used by women, who have or who have had blood clots in the legs, lungs, or eyes. Evista may increase the risk of dying from stroke in women at high risk for heart disease or stroke. Talk to your doctor about all your medical conditions. Seek care immediately if you have leg pain or warmth, swelling of the legs, hands, or feet, chest pain, shortness of breath, or a sudden vision change. Do not use Evista if you are pregnant, nursing, or may become pregnant, as it may cause fetal harm. Women with liver or kidney disease should use Evista with caution. Evista should not be taken with estrogens. Side effects may include hot flashes, leg cramps, and swelling. For more information about Evista, contact your Lily sales representative. Visit

www.evista.com. See our ad in good housekeeping or call 188-44Evista.