Speaker 1 (00:00):

Good morning everybody. And welcome to one of the first exciting events in the Festival of Ideas. And thank you for coming on this rainy day. My name is Robin [inaudible], provost, chancellor of university of south Australia, health sciences division just across the road there. And we're one of the co-sponsors of the festival. just a few housekeeping matters. There's a microphone in the middle there we'll be taking about 15 minutes or so of questions and answers after Norman is finished. And if you could come up and briefly just identify yourselves and where you are from, if you are representing anything else other than yourself. And we need to be out of here strictly before 11 o'clock to make my, for the next session. So, well, thank you for your cooperation in that. I I have to say that being on the festival of ideas committee has been the most fun committee I've ever been on because we, we we get to sit around and have lunch and dream up who our heroes are, who we can invite to speak. And one of those heroes of mine was Norman, and I've been listening to him on radio national and secretly admire him for many years. One thing that Norman is uniquely gifted in is the single tiniest translation of medical jargon, coupled with an incredible mumbo-jumbo detector, particularly for detecting medical mumbo-jumbo. And there's not many people in the world who can do that very well while simultaneously translated. So Norman, thanks for coming. And look forward to it.

Speaker 2 (01:59):

[Inaudible]

Norman Swan (01:59):

Thanks Robin. And Adelaide is very lucky to have Robin

Speaker 4 (02:04):

One of our preeminent

Norman Swan (02:05):

Public health researchers press the tab. You've got nothing else to do, but come and listen to me, I'm grateful. It's more than three people in the audience, so thank you very much. I believe it's always a great place to come and talk. So I call this a talk survival of the fittest survival of the finished our survival of the richest and what I'm going to tell the story I'm going to talk to you about is about longevity. Why survival of the fittest? Well, I'm going to talk about genes. Why survival of the fittest, but I'll talk about lifestyle as well and why survival of the richest? Well, what you'll discover is that some of the key determinants of how long we live, I've got very little to do with lifestyle or indeed our genes. And in fact, how we organize the way we live, largely determines how long we live.

Norman Swan (03:02):

We're actually living in a unique moment in human history in terms of our survival. We're surviving longer than we ever have before, but the nature of survival is changing and it's changing extremely rapidly, very much more rapidly than any other time before in history, excluding things like influenza pandemics, or the black death and aids in Sub-Saharan Africa. But apart from those issues in terms of a global pattern, even in poor countries, our survival is increasing quite rapidly, but the pattern is changing and the pattern has changed throughout human history. And I'm going to describe that to you the bottom line, of course. And I don't think for the battles in the audience here, but Philip is certainly here for the festival of ideas. So, you know, his death, one of Phillip's. So as you listen to me and I live with

doors, one of his great obsessions it's this obsession of really anybody in the media, because we're also egoistical, we can't imagine the world without us, but of course we all do have to confront that at a, at one stage, I was actually starting to read Andrew or Hagen's book, be a near me.

Norman Swan (04:21):

And I thought that the poem that he quotes on the front, this piece is actually probably pretty apt given that we're actually all heading in that direction. It's a problem by Alfred Lord Tennyson

Norman Swan (04:32):

Be near me

Norman Swan (04:33):

When my light is low, when the blood creeps and the narratives Preqin tingle, and the heart is sick and all the wheels of being slow be near me when the sensuous frame is racked with pangs, that conquer trust and time are maniacs, scattering, dust, and life, a fury slinging flame be near me when my faith is dry. And when the flies of latter spring that lay their eggs and stint and sing and weave their petty cells and die be near me. When I fade away to point the term of human strife and on the low dark verge of life, the Twilight of eternal day. So no matter how long we live, we've got to confront that at the end. That's a really chilly start to talk. Isn't it.

Norman Swan (05:23):

We actually don't really know what life expectancy has been for most of human history. Since humans evolved maybe 60 or a hundred thousand years ago, a proxy, a reasonable proxy in terms of paleontology and just looking through human history, given the bones are largely what we go by when you go back. Tens of thousands of years is height and paradoxically stone-age paleolithic, humans were reasonably tall and when you actually track height, it declined and declined for thousands of years. And we really only recovered the height of the stone age at the beginning of the 20th century.

Norman Swan (06:09):

So what happened? And there is a re, as I say, there's a reasonable proxy for height. I mean, you just need to look at what's going on in the Netherlands. Just know we're height just keeps on increasing. And you've got this country of giants who are actually also quite long, lived for lots of different reasons, which we might come back to veto when you actually look at the early drawings and paintings of the colonists arriving in America. One of the, some of the earliest were of the Massachusetts tribe and they showed these strong, long limbed peoples true of Aboriginal people in the street as well. But then that was just a moment in time. And then these native peoples, these indigenous was became you know, their lives became as Hobbs would say, nasty brutish and short. Sure.

Norman Swan (07:01):

The the late medical historian rye Porter had an aphorism or an Axiom, which she said was that whenever we changed the way we live, new diseases arise, new problems arise in terms of the medic, the human condition. And of course, with development beyond stone age, we developed agriculture with agriculture keen dependency on water on, you know, and climatic changes much more than when you were living in small groups and moving around the countryside. So family became an issue in malnutrition probably really hit very strongly at that stage. People gathered together and the

technology of agriculture allowed cities to develop larger. So there's population growth because of higher productivity from the land, even though there were these ups and downs and people started gathering together in cities and it's quite likely, yeah, human life expectancy declined during that time because new things started to emerge.

Norman Swan (08:05):

When you've got large enough numbers of humans living together, then you can start to get sustained epidemics. And it's highly unlikely that diseases like infections like smallpox or indeed measles existed in the stone age. In fact, the maths, the mathematical dynamics of of measles can't remember the number, but it means you've got to have a population of roundabout 300,000 to sustain measles beyond generations. So new diseases emerge as we consolidate it into cities. And almost certainly that caused a decline in human life expectancy. I should really define terms before I go on much further. When I say life expectancy, I'm talking about the average number of years you can expect to live from birth. Life span is really the maximum time that a human being can live. And I'm going to play with both of those ideas through this presentation, but most of the time I'm talking about life expectancy.

Norman Swan (09:05):

The average time we have in this mortal coil. So agriculture consolidation into cities brought population growth, and almost certainly life expectancy declined the industrial revolution in Britain, and then Europe also was a time of extreme ill health, where, where you had the countryside being sucked into the cities. These cities were incredibly unhealthy places and life expectancy. Again, almost certainly went into decline. We don't know for sure, but it certainly looks that way from the history. And again, new diseases arise arose during the, during the industrial revolution. One of them is actually schizophrenia. There is no convincing description of schizophrenia before the industrial revolution. And another one of my themes here is we think of coronary heart disease, diabetes cancer, as causes of shortened life expectancy, but diseases like schizophrenia are also causes of shortened life expectancy, not just through suicide people with schizophrenia in the modern day.

Norman Swan (10:16):

And the only data that we have that are reliable on that are from Western Australia because they have hospital linked records, is that in people in Western Australia, we've got no reason to believe it's not true in south Australia or other parts of the country. They have life expectancies shorter than indigenous people in this country. And it's not because of suicide just it's because they're dying of coronary heart disease, cancer, and other problems earlier, they're actually sicker than average because they're actually neglected by the system. Colonization also was a cause of life expectancy shortening because what happened was that European immune systems turned up in the new world with European infections and infected the new world and conquered the new world. So this is part of that story. I was telling you about indigenous peoples and life expectancy reversal, but interestingly colonization never worked that well in the tropics because European immune systems were never very good with malaria and other tropical diseases. So in fact, Europeans were never terribly successful in the tropics. One of the interesting things that occurred was through slavery, the importation of 12 million African slaves to the Caribbean and the American colonies over, over a fairly short period of time, what that did was it actually, it was so overwhelming in terms of its numbers, that it actually imported a tropical disease environment to the Caribbean. And it started to be logistically extremely difficult for the European overseers to manage it because they started to have increasing death rates.

Norman Swan (12:01):

And of course the Caribs the groupings in the indigenous peoples of the Caribbean very quickly died out as well. The thing here in all this is that our life expectancy is fragile and that, you know, people say, well, how long am I going to live? What's the, what are the determinants of how long I live? And until recently people have said, well, you know, if you've got an old, if your grandparents lived a long time, your parents lived a long time, you're going to live a long time. It's your genes, the genes that count the story, I've just told you has a message in it, which is the genes are not necessarily as powerful as you think. And it can be easily overwhelmed and lifetimes we've seen a dramatic life expectancy reversal. We've seen it. We've seen problems obviously with aids in Africa, but I'm talking about the former Soviet republics. They have had a dramatic reversal in life expectancy for lots of different reasons, which we'll come back to. So if genes were so powerful, you wouldn't see them being so sensitive to what happens in the environment. There is an exception to this, and I'll come back to this again. Later there's people who reach a hundred centenarians until recently, or almost certainly freaks nice freaks.

Norman Swan (13:30):

It's a genetic abnormality. I think that's about one in 10,000 people reach a hundred. And a lot of people who reach a hundred are actually quite young. For some reason, they're biologically young, they've got genetic mutations which allow them, or they've inherited it almost that inherited allow them to get to a hundred. But we're seeing a change in that, which is that no longer do you have to be genetically abnormal to become a centenarian. So we didn't re regain the height of the stone age to the 20th century. And that's significant because what seems to have been happening from the records is that from about 1830 or so, life expectancy seems to have been increasing by about three weeks per year. That's the statistic for women, but it's almost certainly the similar for men. Of course, in the 19th century, women's life expectancy was shorter than men's.

Norman Swan (14:30):

And that was because of childbirth and pregnancy. But when we conquered obstetrics and provide higher quality of Cedric care, where we taught doctors how to wash their hands, something that they forget from time to time, but when obstetric care improved so started to survive beyond that. And so there are multiple causes of this increased life expectancy and it's worth examining them because it tells us a lot, by the way, there's one, a lot of rubbish spoken about the obstetric story. The feminist analysis of obstetrics was that these Patsy article male obstetricians who hate women have technologized childcare, and isn't that terrible. And really we can all go off into the Bush and have our babies that pervaded the world health organization, that ideology every country in the developing world, which has taken that approach, that feminist, if you like, analysis of obstetrics has failed to improve their child and maternal mortality statistics, the countries in the developing world, much as you'd like to hold to this idea of patriarchal obstetrics, the countries which have in the developing world, which I've invested in technology, where women have their babies in a clean environment in hospital with proper health care, from a midwife at minimum, their child and maternal mortality rates are declining faster women for safe childbirth, particularly in the developing world, need hospitals, sterility, and trend attendance.

Norman Swan (16:14):

And that's of course, what started to be introduced in Europe in the 19th century. There's a great debate amongst gerontologists about whether or not we're maxing out in terms of life expectancy, are we reaching our limits? And some people see the limits of life expectancy around about 85. Remember, I'm talking about life expectancy, not lifespan by and large and jail Shen Skitch in Illinois is one of the people

who have promoted this by and large, they've been overwhelmed by the evidence. The evidence is that well, common sense tells you is that one day we'll have to reach our limits, but we're nowhere near them at the moment. There isn't even the slightest sign of tailing off of life expectancy increases. That just keeps on going up in Japan, where they're much better off than we are in terms of life expectancy, not a sign of tailing off.

Norman Swan (17:07):

We just keep on increasing. Interestingly, there hasn't been, despite the fact we talked about aging all the time that hasn't been a lot of research into aging itself. Most of the research that's going on around the world into aging has really been into the diseases of aging. So obviously we get more cancer, we get coronary heart disease, diabetes, and it's what those diseases do to us as we age. But a lot of the researchers will be looking at it's really only quite recently, that people have tried to look at what fundamentally goes on in the body as we age. They still don't really know, but there's a story coming together that looks plausible. That one of the things is that we have a background level of inflammation in our bodies. It seems sort of inflammation when you get a rash, when a wound healed, but it happens on the inside.

Norman Swan (17:55):

That's an activated immune system, which you can't get your it's part of how you develop Afro atherosclerosis. You need inflammation, you need immune cells to take the cholesterol in a bit of irritation and laying down the cholesterol causing that constriction. And that inflammation causes fibrosis thickening of tissues, stiffening of tissues, and the aging of tissues, free radicals, highly active oxygen species are also involved in that process. I, as our, how we, how we utilize and make metabolize energy, produce energy and metabolize it in our bodies. And the combination of these things is what's going on in energy. And we're starting to realize that when you actually have a lot of fat cells, a lot of fat on board, you have an increased level of inflammation in your body and therefore you age more rapidly. And there's other, other current coronary heart disease. Does it so there, see, it's a bit of a fad at the moment in research, but it looks as though there's a story there, but inflammation, unfortunately, taking anti-inflammatory agents doesn't seem to this process nor indeed do antioxidants, which are supposed to mop up these free radicals. In fact, randomized control trials of antioxidant supplements show that's vitamin C E B to quarantine those taking those antioxidant vitamins have an increased mortality rate, increased save your money.

Norman Swan (19:28):

And that's correcting for the background level of illness that these people have. I want to talk about this changing pattern of mortality a bit more, and go back to the 19th century. There was a debate in the medical profession after the war, second world war saying, looking at the dramatic decline and tuberculosis, and people said, fantastic. This is proof that these new antibiotics we've got the one for tuberculosis was called streptomycin is causing the decline of TB, trying for medical technology and the public health people like Robin said, no, cause people like Robin. Yeah. Don't like curative medicine, like preventative medicine, except when they're sick.

Norman Swan (20:13):

Okay. The public health people say, no, no, no, no. If you look at the statistics and they were right, if you look at the statistics, tuberculosis with declining from the late 19th century, and the reason for tuberculosis declining has actually improved nutrition, improved housing improved urban environments.

Cause tobacco losses is the quintessential social disease. Yeah. Barry Smith, a historian at the Australian national university said, no, the public health people are wrong because he and a colleague in Germany had looked at parish records in Europe and they found parishes next to each other, equally poor, equally bad housing equally exposed to famine and there seem to be lower rates of tuberculosis. And they seem to be higher life expectancies in one village compared to another almost side-by-side. And they try to look for the correlates, very hard research to do full of inaccuracies, but they try to look for the correlates of what determined the healthier looking village from the one that was unhealthy. And the one thing they came up with again, and again, was that parishes that torch taught their girls to read and write were the ones which had lower rates of TB and seemed to have higher rates of life, higher life, expectancies, female literacy. This is no being shown in the modern world, in the developing world, a close correlation with female literacy and the health of a community what's going on there.

Norman Swan (21:48):

Education. Well, let me tell you

Norman Swan (21:51):

That when you look at the factors, the things that shortened life expectancy education cuts across the lot. So if you're a smoker and you compare two smokers smoking 20 a day, the person who has not had a university education versus the one who has the person, who's not, will die sooner from their smoking. So for risk factors, you're much less likely to smoke if you've got a higher education, but if you are, you're still less likely to die. Education cuts across all this. You will live a shorter life if you've not been well-educated by and large, on average, there's always exceptions. So education cuts across the board, probably what's going on with female literacy is the notion of control is that women who are the gatekeepers traditionally of health and the family and in the community are less liable to be listening to mumbo-jumbo to use Robin's phrase and more likely to be able to have the confidence, to give people the answers. People don't really know, but it's so such a solid factor that it became a health goal for the world health organization under half-time Mahler, female literacy was a health goal supported. Was it? So that's my other message, which is that you tend to think in narrow terms of cholesterol, smoking blood pressure, but the things that determine our longevity and well-being are sometimes surprising and outside the box.

Norman Swan (23:28):

So life expenses and see improved obstetric care and so on, but what,

Norman Swan (23:32):

And I want to improve, but if

Norman Swan (23:34):

You were walking, let's say you're walking down north terrace in 18 80 18 90 when life expectancy in Austria, which is one of the highest, the time New Zealand was higher, but probably about 40 was the life expectancy is something like that in Australia. At that time, of course you, without your convict heritage would like to think you'd probably a longer life expectancy, but there've been plenty of elderly people walking down the streets through the streets of Adelaide in 1880. Yeah. Life expectancy was 40. What's the story here? Well, 40 was life expectancy at birth. And of course you had these massive numbers of babies and indeed women dying in our own time of childbirth. You had not massive numbers of children dying and not getting to the age of 15. What happened in the late 19th century and

through the big early 20th century through indeed better education, better housing, better nutrition, immunization, the beginnings of antibacterial compounds and other things, probably the getting rid of congenital syphilis was very important as well. Is that you've got, you had a better chance of getting through childhood to adulthood and that's what increased the life expectancy through the first half of the 20th century, but a statistic that did not

Norman Swan (24:59):

Change from

Norman Swan (25:02):

1880 to 1950 in Australia Britain, or the United States was life expectancy at 50, fewer, 50 and 1880. Your chances of getting to 70 were exactly the same roughly as they were in 1950 after world war II.

Norman Swan (25:20):

What has changed

Norman Swan (25:22):

In developed countries like ours since the second world war is life expectancy at 50 w apart from the shameful statistics we have in Aboriginal communities in Australia for the rest of us, we're kind of doing as well as we can with perinatal, infant and child mortality.

Norman Swan (25:44):

The gains are

Norman Swan (25:45):

Coming from life expectancy at 50. So the story constantly change it, but it's now changing so quickly that there are some statisticians who are saying we're maxing out already at life expectancy at 50. No, what's booming is life expectancy at 75. So what are the causes? What is changing? No, because this has enormous social and political consequences. And I'm not just talking about an aging population here because there's a lot of stuff talked about the aging population because people say, well, why would you bother living to 90? If it's going to be crap? So a word of warning about this crap business, cause it depends how old you are and who you ask. What crap means.

Norman Swan (26:40):

Dan cannon, who won the Nobel prize in, I think about four years ago, who in fact is not an economist, he's a psychologist. He's an Israeli who works at the university of California, Berkeley. And he worked with his late colleague who would have also won the Nobel prize. Had he survived and was Twerski, who was at Stanford. And they pioneered along with others, the science of risk perception, how our minds operate when we're faced with risk. And the reason he won the Nobel prize was that he did the psychological analysis. It really underpins what's called contrarian investment. This is what Kerry packer knew intuitively is that you buy on a falling market and you sell in a rising market. And, but Dan [inaudible], we're really interested in because the notion of loss is really quite important. Some of you have you talking about this before is that we react more emotionally to the sense of loss than the sense of gain.

Norman Swan (27:42):

That's why when the market's dropping, we all want to sell our shares. And what Dan cannon taught us was you don't do that. You hold on because you only lose money when you sell your shares, you wait it et cetera, but he's of course, but this notion of loss really is, is very powerful. So what they did was they did an experiment, which was, they said the, they asked two groups of people, one in their forties and one in their seventies. And they said, there's, I can't remember exactly what the details were, but roughly here's this healthcare intervention, it costs $50,000. And it will give you, you in your S when you're 75, 2 years of extra life, but the the cost not only the financial cost will be extra disability. Would you buy that healthcare intervention? The 40 year old said not on your Nelly and the 75 year old said, thank you very much. I'll have it.

Norman Swan (28:41):

And it's because I was at 40. You don't, unless you're lucky, you don't really have any disabilities. When you're 75, you're probably going to have, you've already got a bowl of sugar, your blood pressure's up a little bit too, probably on two or three medications. You're feeling sore from arthritis. What's a couple of extra disabilities when you know, you know, unless you have enormous faith, this is all you've got. So we'll have another two years, but thank you very much. So it depends on who you ask, but by and large, the causes of extra years of life are also the causes of extra years of disability, free life. So it's true. We accumulate disability as we get older, but we AccuMed. We're actually, the are actually accumulating them later. And this was enormous. There was an enormous debate about this, but by and large, it seems clear that we are staying healthier longer, but at the moment, we had to have a problem of frailty in a, in a very age group.

Norman Swan (29:37):

But what we have is a surge of people heading towards their nineties. I was in Western Australia recently doing something. And the head of emergency department, they're all pair of arrived late. Cause he had a busy wardrobe. People waiting, went into the war as he was doing a ward round of the people, lying in bed, waiting to get into the wards. The average age, average age he calculated was 92 of those people. When I was training in medicine, those people would have been in their sixties. We're just seeing these rapid changes. So what are the reasons for this increased life expectancy at first?

Norman Swan (30:17):

Well, that's just, all of you would love me to give you the easy answer, just take selenium. And that will be it, you know, vitamin C or E I've already told you if it'd been CE and beta carotene moment, you'd die sooner. So don't take them. Selenium is actually one of the ones where there's a little bit of question about that may actually be something to the selenium story, but I wouldn't recommend you jumping in there because nothing's really been shown to benefit some, have been trying to harm alcoholic, water, alcohol, forget that. The the, the there's a lot of mythology about alcohol. We've been sold a pup about alcohol. If you like your Barasa or McLaren Vale wines, enjoy them in small amounts, but don't imagine they're doing him any good. They're not doing any harm and small amounts, moderate alcohol use. If you've got coronary heart disease may help you a bit, but remember that's only coronary heart disease and that's one aspect of your, of your being. If you actually take the whole picture with moderate alcohol use is either neutral or harmful and certainly it becomes harmful beyond. So the alcohol story doesn't do it. It's not going to be boring

Norman Swan (31:24):

Smoking if you smoke. Yeah. The age

Norman Swan (31:28):

Of 20 and don't stop, you'll lose 14 years of your life. As you smoking a pack a day. If you're smoking two packs a day and don't smoke at the age of 20, you will lose 20 years off your life. Your chances of reaching 70, if you smoke in your early lives are harmed more than harboring from, from memory. So what's happening is 50 year olds by and large don't smoke anymore. That's had an enormous impact on life expectancy,

Norman Swan (31:57):

Cholesterol. Cholesterol

Norman Swan (31:59):

Can probably buy you about three years, obesity, a lot of debate about obesity. But maybe six years. Maybe if you look at the car, heart studies of people with obesity and compare people who are obese now with people who are beasts 30 years ago, 30 years apart, they're much healthier now than they were 30 years ago for their level of obesity. And it's probably the healthcare system. That's saving them. They're getting their cholesterol down, their blood pressure down and so on. But obesity is not a convincing life shortener, but maybe six years

Norman Swan (32:34):

Depression, mental

Norman Swan (32:36):

Health, mental wellbeing, some people argue and there's some data suggest that it's at least as important, a factor as cholesterol, particularly in relation to coronary heart disease

Norman Swan (32:48):

Diet. Again,

Norman Swan (32:51):

Forget, yeah, individual nutrients here.

Norman Swan (32:55):

Just

Norman Swan (32:55):

Stop all this stuff about glycemic index and all that. So it's not that they're not important. What counts is your dietary pattern? And what we've basically got to do is eat less like Australians and more like cretins will come from the island. And of course, maybe it was two already. And interestingly, when you look at the pattern and Karen obesity here, and Karen will be with us in the benign and whole after morning team, we'll talk about this more. Is that what Karen argues is? It's not just the dietary pattern, it's the cuisine. It's how you cook your food. So it's the package you get with your dietary pattern. This is why antioxidants don't work. What's not, that is why is that? They're almost certainly more potent

antioxidants in the foods that you eat that have other chemicals that go along with them that help them work that do you far more good than just taking them as in an isolated way.

Norman Swan (33:51):

So it's your dietary pattern and the Mediterranean pattern. There is no Mediterranean pattern really, cause it varies around the Mediterranean, but there is a kind of story here about one-on-one saturated oils about law red meat, more fish legumes Crete in certain interestingly, they don't eat much past or other things that sourdough bread that they which I'm glad to hear like eating. And also there are these substances called advanced glycation end products. You can hear more about these as time goes on age is this is the brown stuff in food. It's the brown stuff in your diet cook. These glycation agents almost certainly speed up aging, very interesting work at the baker Institute in Melbourne it's early days, but you're going to hear more and more about these agents. And the interesting thing about the Mediterranean pattern is it's very low in advanced glycation.

Norman Swan (34:51):

Agency's caramelized products, brown things on food. And of course the Asian diet, the Asian pattern, some of it non-Indian Indians, not very healthy diet, much as I love it. It's very similar to the Mediterranean pattern. When you look at the pattern, the pattern of the sort of protein that people eat, the carbohydrates, the glycemic index of that carbohydrate and the homeowners, fruit and vegetables. So those things do make a difference, but let me just quickly finish. Cause I know that I'm running out of time because remember I said survival of the fittest genes, survival, what was the, my middle one survival of the rich, the fittest survival of the richest, the world in the early nineties or a bank issue with our bank is devoted to the alleviation of global poverty. I may not do it very well from time to time, but that's objective.

Norman Swan (35:46):

And they put out a world development report each year, which looks at an aspect of infrastructure, which helps to alleviate poverty. In 1993, the development report was about health and they got a bunch of economists to work on this. The first thing they did was they said, well, how do you measure all this? And they change the measures of health and wellbeing. And I don't have time to talk about that. But then they said once know that we've got the measure of health and wellbeing. What are the key determinants particularly of life expectancy? Is it per capita income of a country? Nope, very little. Pardon me. Correlation between life expectancy of a country and per capita income Chile in 1993 had a per capita income. The same as America had an 1893 and chili in 1993 had a higher life expectancy than the United States.

Norman Swan (36:37):

So it's not like it's not per capita income. Although obviously extreme poverty is so overwhelming that it will have an influence, but on average per capita income, doesn't make a big difference. Is it how much you spend on healthcare? No, it's not very little correlation with how much you spend on healthcare, the consistent predictor. And remember this is the world bank, not some crypto markets. This organization of life expectancy in a country is the gap between rich and poor, the wider, the gap between rich and poor. And this has been replicated now several times, the lower your life expectancy. And that's why America is 37th on the list. You can take somebody from the United States. Who's been to Harvard errands, X thousand a year lives in a nice house, same occupation. Then take somebody from Britain. Who's been to Cambridge, same socioeconomic status, same level of education.

Norman Swan (37:35):

The American will live less long than the British person or the French work done by my professor, Michael Marmara university college hospital, London, Americans age for age, social class, social class are less healthy, live less long than other people. So there's something going on in societies where you have bigger gaps between rich and poor it's social infrastructure. It's education is access to healthcare. It's lots of other things we don't understand. So my message to leave you with is if you just focus on the smoking, the cholesterol and your Mediterranean diet, you're going to miss the bigger picture.

Speaker 2 (38:28):

[Inaudible]

Speaker 1 (38:32):

Thanks very much. Norman. We've we've gone a little bit over time. What I'm taking away from this as a 50 year old is that 50 is the new 30. So thanks. We've got time to, and don't drink Coca-Cola we've got time for a few questions. So please,

Speaker 6 (38:50):

I just had one quick comment followed by a question you don't have to respond to the comment. The comment was that you said you didn't see any evidence for schizophrenia before the industrial revolution. Perhaps I thought about that is it could just be simply that it always was there, but before the industrial revolution, it was a good thing. Maybe, maybe these were the religious mystics and things

Norman Swan (39:16):

Like that. I think, I think that is absolutely right. What happened in the industrial revolution? So there's a lot of people thought that schizophrenia was quintessentially a genetic disease and they used to think that the incidence of schizophrenia was one in a hundred, whether you were in upper Volta or in London. And in fact, what they know now is that's rubbish. It changes it's an environmental problem. But also what almost certainly happened was that the social disruption revealed these people who are mentally ill, who were probably coped with quite well in their own communities and probably got better in their own communities and didn't get better in the city. So there were more people around. So it's a complicated story.

Speaker 6 (39:52):

My real question now is the one about height. You mentioned people caved one times had quite high height and then it went down and now it's up again? I didn't catch you. I'm trying to explain why that was. Did I miss that?

Norman Swan (40:09):

I, I didn't. I deliberately didn't cause I don't know the cause I have a hypothesis I'm sure you know, better than me.

Speaker 6 (40:17):

I only just thought of it while I was listening to you. I thought the reason is because of horses simply that soon as people needed horses to survive, their height went down and now we don't need horses anymore after the industrial revolution. Yeah.

Norman Swan (40:32):

Except Dutch people cycle. So I'm not sure it works.

Speaker 7 (40:41):

Hello. it's been increasingly recognized by many people, even John Howard that we need oil and that oil suppliers running out worldwide. So their suggestions that starting about now, the world economy will be decreasing several percent a year, assuming we don't do something nuclear, whatnot. How do you think this will effect longevity?

Norman Swan (41:09):

Well that's assuming that your hypothesis is true and we want to continue fixing this is that you have to look. I mean, what I didn't talk about very much was the Soviet union. And when it broke apart, is that when you actually have reasonably violence, not the right word, but sudden and disorganized social change and increases poverty you do get quite dramatic increases in disease and illness. So coronary heart disease rates, cancer rates, lung cancer rates, stomach cancer the side effects of alcoholism have all increased dramatically in the Soviet union. So when you get social disruption and social chaos, you will, if, if indeed the changes are uneven, as you would expect them to be in some places you will see quite dramatic reversals, but that depends assumes that your hypothesis is right.

Norman Swan (42:08):

One more. Okay. So the question was, should you, what about omega-3 fatty acids, fish oil supplements. Yeah. The evidence is actually not too bad on fish oil supplements. They've been hyped up. They're pretty good for your mental state, probably through randomized trials. They may well increase your high density lipoprotein which is the good form of your cholesterol. So the there, and there's no evidence of harm as far as I'm aware. So if you want to spend your money on fish oil, probably a good idea. I'd prefer the fish myself, but

Speaker 2 (42:58):

[Inaudible] into the microphone. Can you hear me? Yeah.

Speaker 6 (43:02):

One of the common themes right through what you were describing, you know, social disruption, et cetera. There's the concept of a metabolic syndrome stress, the whole cortisol system, which you didn't sort of mention the medically, even the education of women can play an important role in this, in the sense that if women are educated, they have more control over their environment. And therefore they actually reduced their overall level of stressors. As you can see what happens in Afghanistan when women were removed from educational institutions and so forth. So I think thematically, there is something more going on in the more, the cortisol hippocampus, that whole system limbic system that's you haven't really mentioned,

Norman Swan (43:49):

No thank you for bringing that up. And if people want to read more about that, it's called Alice static load a L L O S T a T I C. And the concept was invented by a neuroscientist at Rockefeller university in New York called professor Bruce McEwen. You can Google on that, the health report and you can get some interviewed a few times and some people will believe that that's one reason for the hugely the huge

health problems in Aboriginal communities is that the Alice static load is so high because stress does have these biophysical effects on the body, which increase aging and you know, so that, that is absolutely solid research. So thank you for bringing that up and it may well be another mediator of the whole story.

Speaker 6 (44:32):

He created education has been a big indicator. One of the problems that people have taught is that the education system is a huge selection process. And when I explained selection, if your parents are sick because of the genetic problem and you had to leave at 14 or 15 to support the family the statistics is suddenly saying, oh, it's because of education. And I don't see education is ridiculous so much as it's, you know, you've been selected on your ability and your willingness to comply with the behavior system. And I don't know if that's been sorted

Norman Swan (45:05):

Out in any way. So the hazard, I mean, obviously it plays some role. However the, the key question is I actually think it's pretty solid that it's education itself allowing for all that. However, the question is, what is it about education that influences all these other factors, quite an interesting study from Scotland recently, which really suggests it's poverty. If you're not highly on average, if you're not highly educated, if you're not well-educated you Arun less and therefore you are poorer and therefore your donor at that bottom level of the pack with, as Michael Marmont and London has shown all that extra Alyse static load that goes with being at the bottom of the pack. So there's lots of things that happen there. But there may well be a selection process as well, but in a public education system, you do wonder we probably just stopped spending or because

Speaker 1 (45:58):

Of one more. And then we all have to go right for a final question then how much

Speaker 7 (46:03):

Is happiness or wellbeing, a predictor of life expectancy. And if it is, what are some of the alternative things that we can do in society that will improve our life expectancy outside of the traditional medical paradigm?

Norman Swan (46:23):

Happiness is one of these concepts that is booming and booming and research because there's no kind of psychologists have not studied these things that are common terms for us, like happiness or anger and stuff like that. Happiness in terms of mental well-being feeling good as in terms of an absence of depression, almost certainly is correlated with increased life expectancy. I've been looking for the data on that, and you really can't find a lot of the data I've caught at a really hard to find in terms of how many years you get for this, that, or the other, however you can't really find it for mental wellbeing, but the, the negative side is is there, which is that if you aren't depressed and you're feeling bad about yourself, you certainly do have an increased rate of particularly of coronary heart disease.

Norman Swan (47:09):

Maybe just maybe of cancer. Well, that's highly controversial, probably not. So and what can we do? That's not there. Well, Michael mom, I don't know. I keep on cold calling Michael Marmot. He has this

concept called relative poverty, which is that, you know, people, people say, oh, why are people so unhappy these days? They've got a color television and they've got their cars, you know, they can go and do the pokey, Baba, the patronizing remarks. You often hear people say, you know, people are better off than they ever have before. What are they morning about? Well, the reality is if we perceive ourselves to be less well off relative to others, we actually feel worse about ourselves. We actually feel bad and it creates a higher level of chronic stress. So I'm sorry to be drifting into the medical kind of stuff again, but there are correlates to this because if you actually don't have these correlates, then people say, well, it's just all. And you're talking to Rob sociological mumbo-jumbo, but there actually are physical correlates of this. So relative poverty. So it comes back to that gap between rich and poor again. So it's a complicated story.

Speaker 1 (48:12):

Thank you very much, Norman. We, we actually have to go to stay on time, so thank you very much. [inaudible].