

TALKING POINTS

Terminology

What is 'Genomics' (p. 9, 21)

The improved research, diagnostic testing and treatments arising from DNA-directed high-tech strategies – which some like to call precision medicine

What is 'Epigenomics' (p. 9, 175)

The study of the 'chemical tags' that park themselves on the genome, altering gene expression for the individual, and potentially, the individual's progeny.

What is 'Gene Penetrance' (p. 23)

Those characteristics such as eye color or height, that are 100% predetermined by the inherited genes. However, 'gene penetrance' is the exception and not the rule and account for only 5% of the human genome.

Genes / Epigenomes

What is 'transgenerational epigenetic inheritance' (p. 23)

The surprising phenomenon that accounts for the epigenetic alterations a person acquires in their lifetime that are then passed on to future generations.

In your book, you paraphrase a quote by Shakespeare's line "The fault lies not in the stars, but in ourselves." You say "The fault lies not in our genes, but in ourselves." Can you explain this? (p. 35)

You use the analogy of a theatrical script to illustrate how epigenetic regulation works – can you share that with our audience? (p. 22)

And you say we can "switch" on or off (or even up and down) these biochemical markers in our epigenome, at will? (p. 24)

This was seen by the study of the twins, such as the case of the astronaut and his brother. Can you tell us about these twins? (p. 192)

Then there is the 'Supergenome' which includes the genome, the epigenome and the gut biome. What research is currently underway to study this collaborative 'systems biology' approach? (p. 32)

As someone who has spent his career in genetic research, what do you feel is the best use of today's epigenetic research? (p. 43)

And you say that there are at least seven biological pathways (which include the modifiable, non penetrant genes) that determine which major diseases or states of health a person will potentially experience? (p. 44)

What's really excited now is the 'precision medicine' that will also give rise to epigenetic mapping. How far off is this? Can you explain this to our audience? (p. 45)

So you don't believe the 'direct to consumer' gene testing that is being sold today is worthwhile? (p. 47)
Is there any genetic test out there today that you feel is worthwhile? (p. 47)

Can you tell us about the ENCODE Project that was formed by 32 research institutes from around the world? What have they found? (p. 51)

And the date they found equated to about 300 years of computer time?

What is meant by 'Junk DNA' and 'dark genome'? (p. 48)

So you say that ENCODE's research offers hope for mapping an individual's epigenome at different points in their lives and providing that information to an individual's health provider who, in turn, will recommend particular changes to the patient's lifestyle? (p. 54)

What about those 'variant' genes which carry disease that cannot be altered? (p. 56)

Personalized Medicine

I read in your book that there will soon be a comprehensive blood draw that will precisely depict an individual's hundreds of biomarkers to predict their health or illness. You also said that there is a "biomic" or intestinal tract assessment that informs an individual's health provider how well his patient is absorbing nutrients and pharmaceuticals, as well as the impact of their lifestyle on their health. Can you tell us more? (p. 5)

What health providers will be looking at is a patient's oxidative stress, inflammation, immunity, detoxification, lipid metabolism, mineral metabolism, and methylation. Is that right? (p. 66)

You say there are 4Ps to this new approach to medicine. Personalized, Predictable, Preventative and Participatory. (p. 67-68)

You write that our current approach to prevention and treatment of metabolic syndrome, often associated with heart disease and type 2 diabetes, as well as many other diseases, afflicts roughly a third of our national population. How could personalized medicine play a role in the future of those who are either suffering from these diseases now, or for the progeny of those people? (p. 111)

You refer to a DNA study conducted at Harvard involving the gut biome and the ability of the human gene to shift in accordance with diet. Why is this important? (p. 129)

In your book you quote functional medicine pioneer Dr. Jeffrey Bland what stated that "Disease is a delusion." Do you agree with this and can you tell us why? (p. 171)

Mind Matters

Your best selling book, Mind As Healer, Mind As Slayer, really introduced to readers the link between stress and physical illness – specifically heart disease, cancer, arthritis and respiratory illnesses. What have you discovered since then? (p. 145)

And you discuss the impact of early life trauma and stress on telomeres - the protective caps at the end of each strand of DNA that protect our chromosomes which affect how our cells age. Has science advanced in this research? (p. 151)

What role does stress management – and even meditation – play in mental health? You cite research that indicates gene expression changes the body's immune function. (p. 154)

You wrote that researchers have demonstrated with convincing evidence that mindfulness meditation can induce immediate and direct modification of gene expression, and changes in diet and exercise within just a few hours. (p. 155)

Since inflammation is the root of so many diseases, I found it fascinating that the genes that are down-regulated with mindfulness meditation practice are those implicated in inflammation! (p. 156)

You describe the 'autogenic training' developed by German psychiatrist Dr. Johannes Heinrich Schultz from the 1930s. Can you describe this for our audience? (p. 164)

Conclusion

How would you like to see the future of medicine performed?

Are you comfortable with where our national healthcare policies? (p. 177)

What do you see as the ethical concerns confronting science in the next century? (p. 182)

You refer to the 'promising companies of the future' such as Thorne Research, Pillar Health, WFX, Habit, Plum Organics and others. Can you tell us what they are doing that excites you? (p. 184)