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Fighting The Double Edged Scalpel of Aging and Neurosurgery.

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Introduction

In other diseases, the Healthy Dr. fights for the ailing patient. But with Aging, both may battle the problem and it's effects, particularly for Neurosurgery.

Needs for Neurosurgeons are predicted to increase dramatically, perhaps double with the aging population, report some studies, and therefore preservation of long learned and invaluable skills is in many ways priceless.

In the last decade, substantial and encouraging research advances have been made for aging, and the mandate of NIH was even changed to the "HealthSpan Imperative". But for the risks for the aging surgeon and patient to be minimized, there is a need for both continuous improvements in medical Age Management Medicine , and a personal commitment to making best use of what can be done to protect the surgeon and the specialty, for best outcome for all. Fortunately, the rapid increase in the rate of basic knowledge and treatment options is promising, with some important effects. But, to benefit optimally, it requires attention across discipline lines in an already busy schedule.

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1)Cognitive Function Programs: Programs for cognitive function and training for Cognitive Improvement are present. The most effective in testing for clinical progress is BrainHQ by Dr. Merzenich, with a long history in this area and many awards, winner or Russ Prize, Bioengineering's highest order. His program uses brain plasticity and his programs appear to have the best demonstrated results , available on your computer, (MultiCenter, Prospective, Randomized, Controlled , Double Blind), showing general overall improvement.

2)Muscle loss affects many capabilities including precision movement and stamina due to reducing key chemical factories of the body. Muscles are in total our largest molecular chemical factories. These are key capabilities for neurosurgery endurance, judgement and precision in treatment. They need support with aging, even with good workouts. Recently research groups have reported compounds that reduce loss of muscle strength and function, and improve neural function. One from a neurosurgeon based on an extract Follistatin derived from 17 day egg embryos, which is a Myostatin Inhibitor, an important molecule limiting in the busy building the chick and resulting animal. Taken as a powder or bar (MYOS).
Another recent example by a team at McMaster University reported "A whey protein-based multi-ingredient nutritional supplement stimulates gains in lean body mass and strength in healthy older men in a randomized controlled trial"

3)Customized supplements aimed at our molecular biology: Nobel Prize winners are heavily involved with products to mitigate aging on the market, including for example Basis Elysium with 6 Nobel winners optimizing biology. Also Healthy Cell system by Nobel Nominee, Dr Vincent Giampapa, MD, in molecular biology , is a Dr. for Physicist Steven Hawking, who himself defies ALS, age & disease in his survival and good mental function.

4)Fitness and Exercise regimens, such as Cenergenics, which are individualized and complex, but involve activity maintaining VO2 max, joint function, etc are some of several key metrics to track, preserve ,and improve.

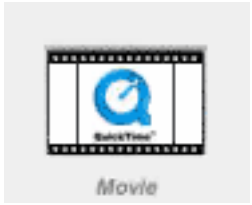
5)Optimizing Healing, NIH funded Programs at UCSF (Dean Ornish Spectrum Lifestyle) and Harvard Mind Diet reported a number of promising effects when rigorously followed, are good models. Diet including the issue of our very large microbiome appear to play a large part in aging diseases.These have shown particularly helpful results in controlled trials.

7)Molecular biology is said to be going exponential, with boxes of new tools such as CRISPR, for gene modification. This does not yet appear to have a practical direct bearing on the neurosurgeon , but likely this direction will, perhaps soon .

(However supplements are weakly controlled, but the inexpensive journal Consumer Lab is one of the best reliable, inexpensive and quick guides.)

Results

This short review shows reports that substantive aging problems can be reduced, and aspects of aging ameliorated to a useful degree, in a now rapidly advancing field.



Conclusions

Better progress is likely, and not only can the patient benefit, but the surgeon for personal health, and improved patient treatment. A worthy goal from diligent efforts.

Learning Objectives

The challenges of aging, current methods to ameliorate them, and the direction of the multiple disciplines involved.

References

Textbook of Age Management Medicine Leake and Greenberg, 2015 Vol 1&2

plus other specific references with poster handout.