

A Sampling of Current and Promising Aging Research

Below is a brief sampling of some of the most relevant and current research on aging-related disease in the field.

- 1. On November 28, 2015, the FDA approved the testing of Metformin, a decades-old diabetes medication, as the first drug to treat aging, due to its capacity to reduce by 30% all cancers in users and other morbidities .[5]**
- 2. On November 25, 2015, the FDA approved an adjuvant therapy (developed by Novartis) for a flu vaccine to boost immune response in older persons.** This development goes beyond “a drug against a disease” model, but seeks an appropriate regulatory framework to support the underlying health of older persons, using “adjuvant” (i.e. “supportive/additional”) therapy.[6]
- 3. At the Genomics Institute of the Novartis Research Foundation (GNF) in La Jolla, and the Buck Institute for Research on Aging, in Novato CA, chemical compounds (in particular IIIQ site suppressors) have been identified that can block the production of certain free radicals in cells without changing the energy metabolism of these cells.** This approach can lead to a new class of drugs against aging-related conditions ranging from neurodegenerative diseases to cancer and transplantation rejection.[7] [8]
- 4. The immunosuppressant drug Rapamycin, believed to mimic the healthspan extending effects of caloric restriction (CR-mimetic), has produced improvements of energy metabolism, and to extend lifespan and delay aging in mice, and was also effective against particular aging-related diseases, such as Alzheimer’s disease, in human studies. Human studies of Rapamycin against Alzheimer’s disease and for healthspan extension have been actively conducted at UT Health Science Center’s Barshop Institute for Longevity and Aging Studies.[9]**
- 5. By splicing the circulatory systems of animals (mice) together, via the process of “parabiosis”, young blood was shown to have rejuvenating effects on old tissues, including the heart, brain, and muscle tissues, with improved strength and cognitive ability.** Some of the implicated rejuvenating substances included: Notch signaling activators, deactivation of the transforming growth factor (TGF)- β that blocks cell division, oxytocin, and Growth Differentiation Factor 11 (GDF11). In September 2014, a clinical trial by Alkahest in Menlo Park CA, became the first to start testing the benefits of young blood and young plasma in older people with Alzheimer’s disease.[10]
- 6. A new class of drugs – the “senolytics” capable of eliminating senescent cells and the accompanying pathologies – are being developed, in Mayo Clinic, Rochester MN and elsewhere.** Thus the combinations of the “senolytic” drugs Dasatinib and Quercetin proved effective against senescent human cells and in a mouse model. Together these drugs were able to reduce senescent cell burden, extend healthspan and improve physical exercise capacity in old mice, reducing their osteoporosis and other age-related pathologies.[11]

References

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