



Antiaging ve Beslenme

Dr. Hilayda Karakök



Aging / Antiaging - Beslenme

Aging nedir?

Aging = İnflammaging

Yaşlanma sürecinin insan biyolojisindeki karşılığı



Aging



Pilkington, S. M., Bulfone-Paus, S., Griffiths, C. E., & Watson, R. E. (2021). Can skin aging contribute to systemic inflammaging?. *The Journal of investigative dermatology*, S0022-202X.



Anti-aging

Yaşlanmanın yavaşlaması

Yaşlanmanın durması

Genleşme



RESEARCH ARTICLE

Quantification of biological aging in young adults

Daniel W. Belsky, Avshalom Caspi, Renate Houts, Harvey J. Cohen, David L. Corcoran, Andre...

PNAS July 28, 2015 112 (30) E4104-E4110; first published July 6, 2015; <https://doi.org/10.1073/pnas.1506264112>

Edited by Bruce S. McEwen, The Rockefeller University, New York, NY, and approved June 1, 2015 (received for review March 30, 2015)

Article

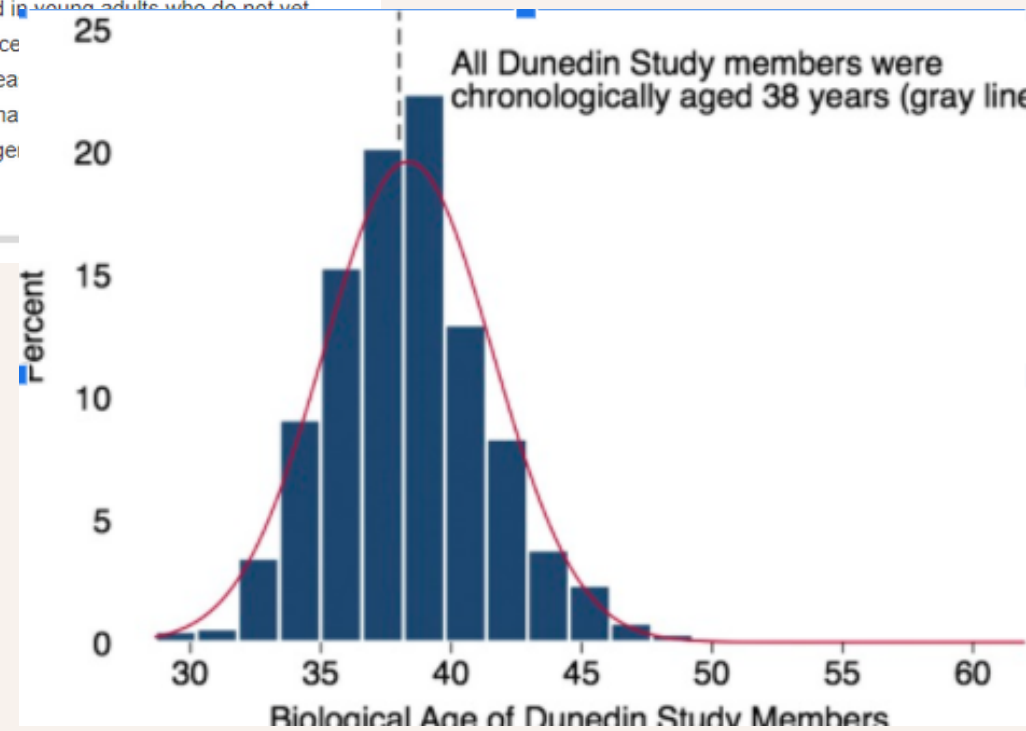
Figures & SI

Info & Metrics

PDF

Significance

The global population is aging, driving up age-related disease morbidity. Antiaging interventions are needed to reduce the burden of disease and protect population productivity. Young people are the most attractive targets for therapies to extend healthspan (because it is still possible to prevent disease in the young). However, there is skepticism about whether aging processes can be detected in young adults who do not yet have chronic diseases. Our findings indicate that aging processes can be detected in people still young enough for prevention of age-related disease. The science of healthspan extension may end of the lifespan; rather than only studying old humans, geriatrics should study the young.



- Çalışmadaki 1000 kişi, 38 yaşında
- Biyolojik yaşları: 25-50

Kaç yaşındasın?

Çalışmalar bedenin yaşının kronolojik göstergelerden bağımsız olabileceğini gösteriyor

Biyolojik yaş - fiziksel görünüm ve beden işlevleri ile daha uyumlu

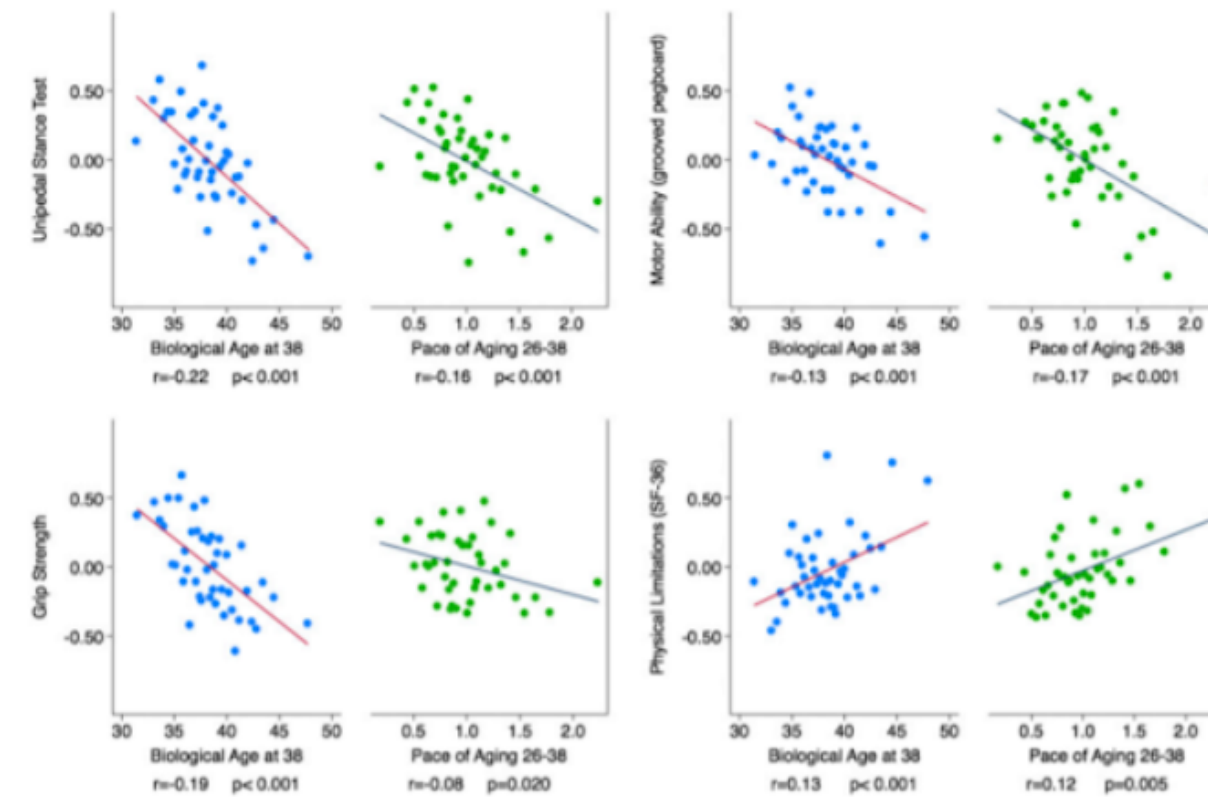


Fig. 5. Healthy adults who were aging faster exhibited deficits in physical functioning relative to slower-aging peers. The figure shows binned scatter plots of the associations of Biological Age and Pace of Aging with tests of physical functioning (unipedal stance test, grooved pegboard test, grip strength) and study members' reports of their physical limitations. In each graph, Biological Age associations are plotted on the left in blue (red regression line) and Pace of Aging associations are plotted on the right in green (navy regression line). Plotted points show means for bins of data from 20 Dunedin Study members. Effect size and regression line were calculated from the raw data.

Biyolojik yaşlanma eğrileri

Yaşlanma hızı kişiye özgü

Bazı deneklerin yaşlanma hızı 16 sene boyunca sıfıra yakın izlemiş

Az sayıda deneğin 16 senelik izlemde biyolojik yaşının azalmış

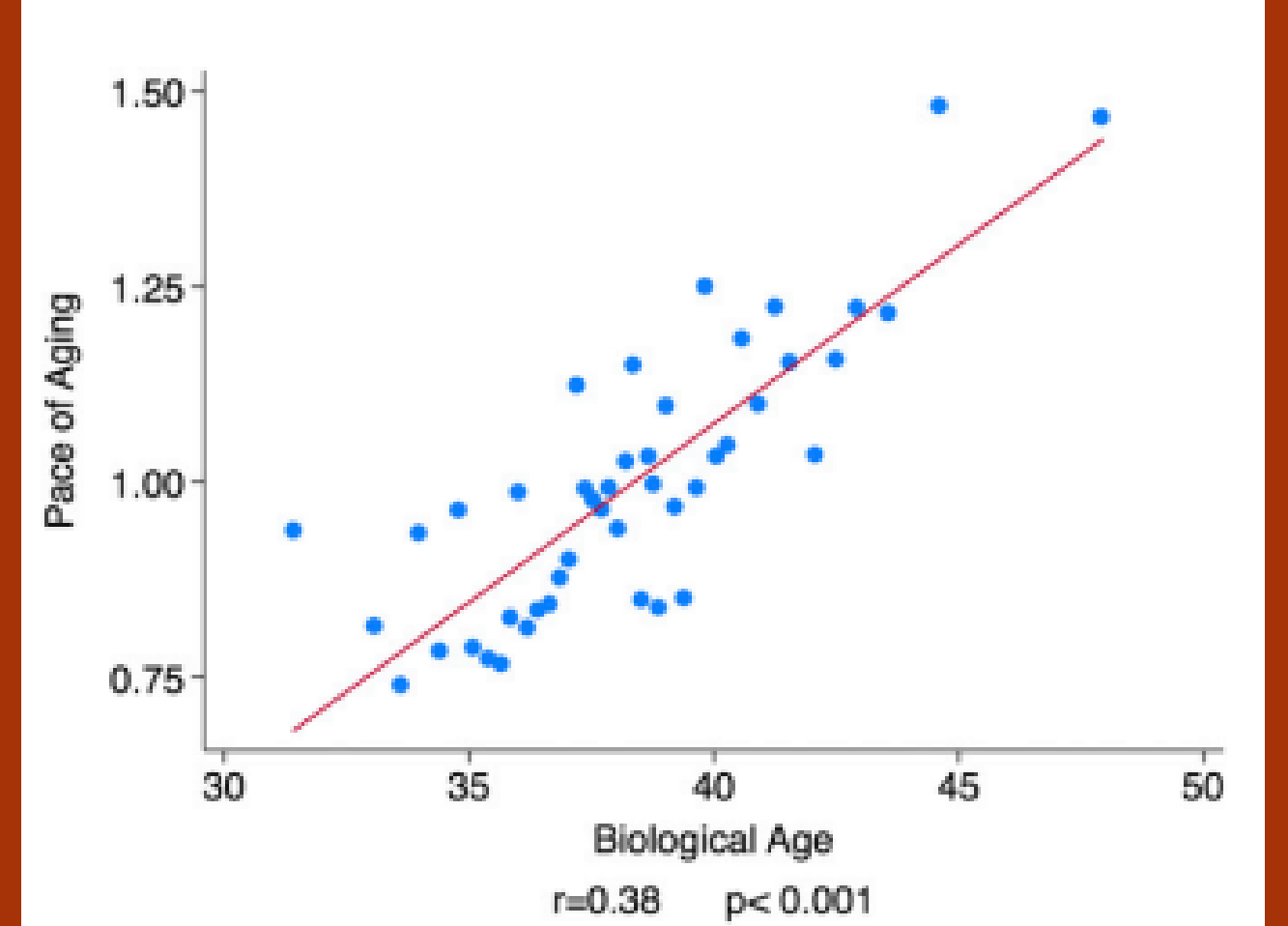


Fig. 4. Dunedin Study members with older Biological Age at 38 y exhibited an accelerated Pace of Aging from age 26–38 y. The figure shows a binned scatterplot and regression line. Plotted points show means for bins of data from 20 Dunedin Study members. Effect size and regression line were calculated from the raw data.

Çalışmalar



Biyolojik yaşlanma

Bedenin beklenen hızla yaşlanması



Akselere yaşlanma

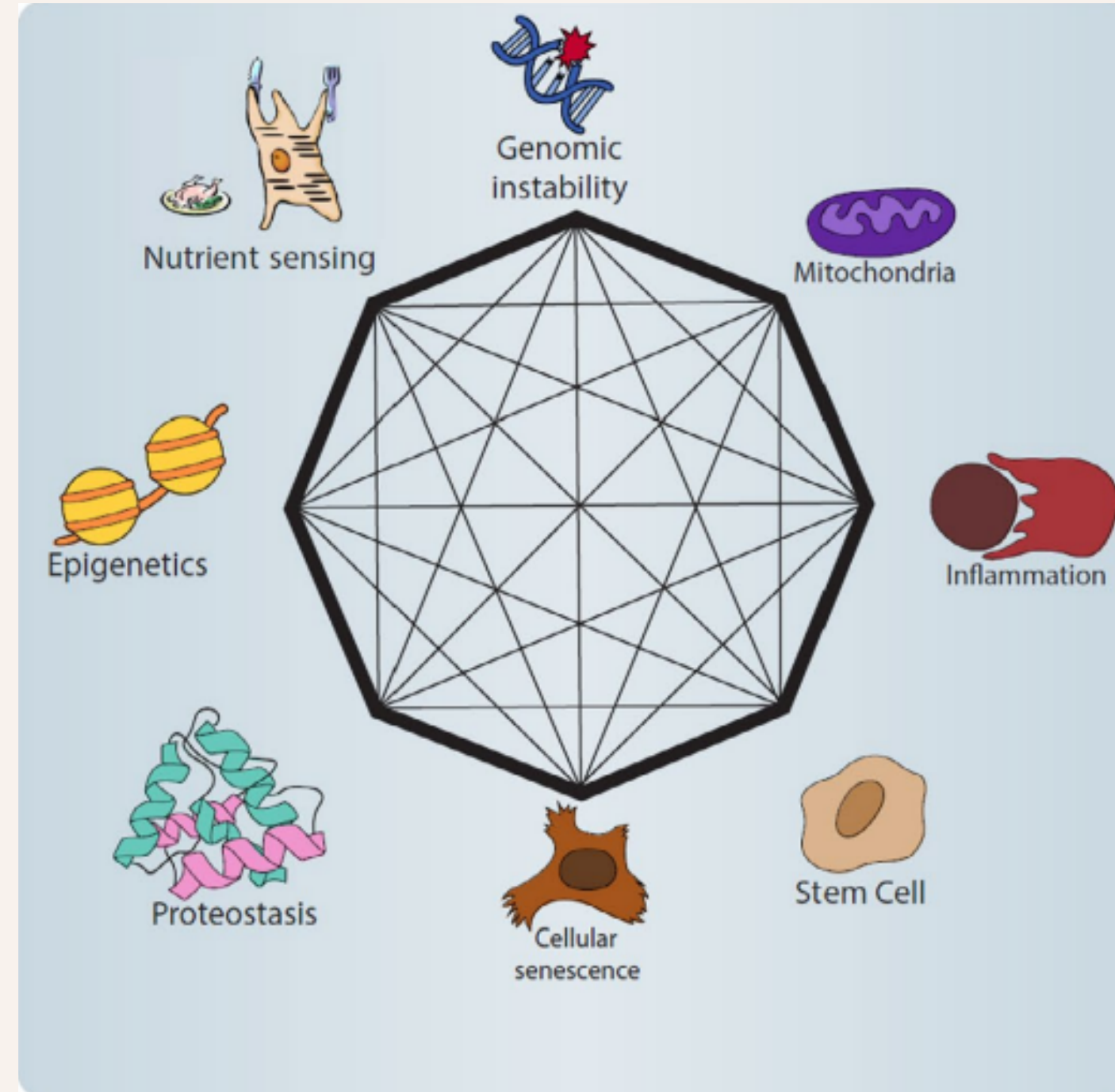
Metabolik dejenerasyon nedeni ile organ fonksiyonlarının beklenenden erken yaşlanması



Frailty

Tanı konmuş hastalık olmamasına karşın kırılabilirlik / ölüm riskinde artış
>65 yaş

Biyolojik Belirleyiciler



Ferrucci, L, Gonzalez-Freire, M, Fabbri, E, et al. Measuring biological aging in humans: A quest. *Aging Cell*. 2020; 19:e13080. <https://doi.org/10.1111/accel.13080>

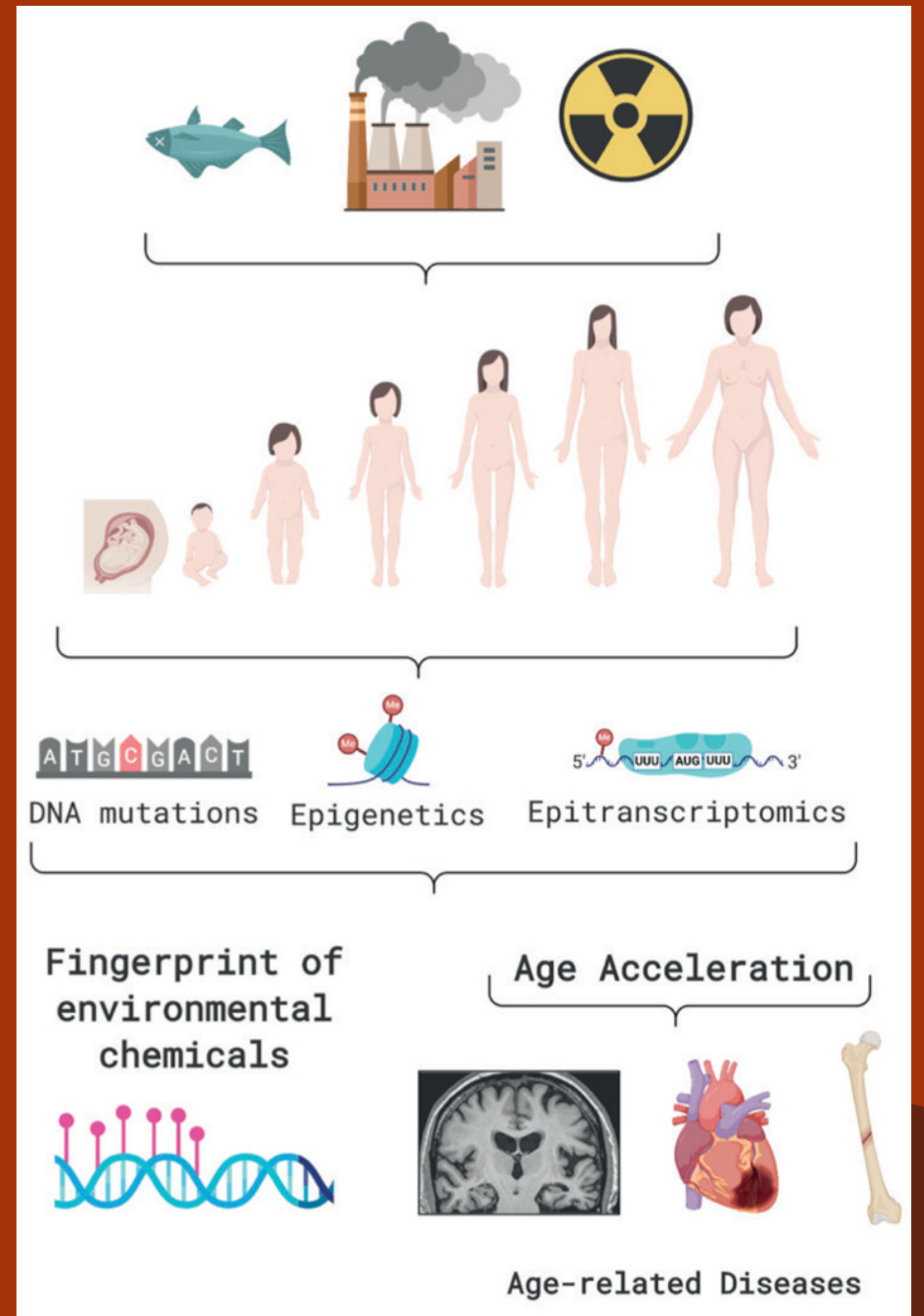
Çevresel etmenler



Prada, D., Belsky, D., & Baccarelli, A. (2021). Is your environment making you older? Molecular biomarkers and new approaches to investigate the influences of environmental chemicals through aging. *La Medicina del lavoro*, 112(1), 8-14.

<https://doi.org/10.23749/mdl.v112i1.10826>

Yaşlanma & Dejenerasyon



Prada, D., Belsky, D., & Baccarelli, A. (2021). Is your environment making you older? Molecular biomarkers and new approaches to investigate the influences of environmental chemicals through aging. *La Medicina del lavoro*, 112(1), 8-14.

<https://doi.org/10.23749/mdl.v112i1.10826>

Aging?



Belsky, D. W., Caspi, A., Arseneault, L., Baccarelli, A., Corcoran, D. L., Gao, X., Hannon, E., Harrington, H. L., Rasmussen, L. J., Houts, R., Huffman, K., Kraus, W. E., Kwon, D., Mill, J., Pieper, C. F., Prinz, J. A., Poulton, R., Schwartz, J., Sugden, K., Vokonas, P., ... Moffitt, T. E. (2020). Quantification of the pace of biological aging in humans through a blood test, the DunedinPoAm DNA methylation algorithm. *eLife*, 9, e54870. <https://doi.org/10.7554/eLife.54870>

Beslenme



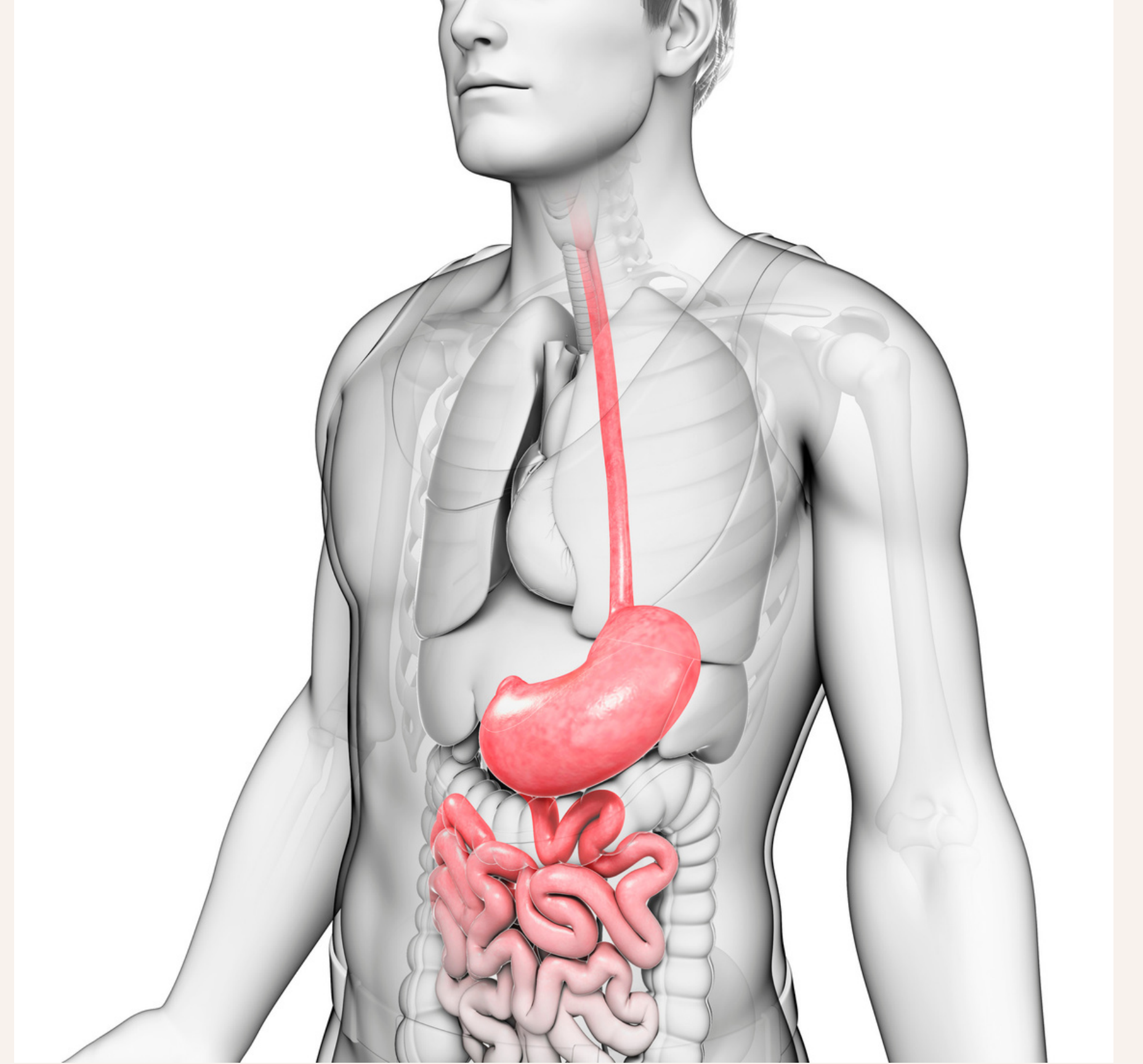
Leite G, Pimentel M, Barlow GM, Chang C, Hosseini A, Wang J, Parodi G, Sedighi R, Rezaie A, Mathur R. Age and the aging process significantly alter the small bowel microbiome. Cell Rep. 2021 Sep 28;36(13):109765. doi: 10.1016/j.celrep.2021.109765. PMID: 34592155.

Sindirim Sistemi

Değişen anlayışımız :

Sindirim Boşluğu
+
Mikrobiyata

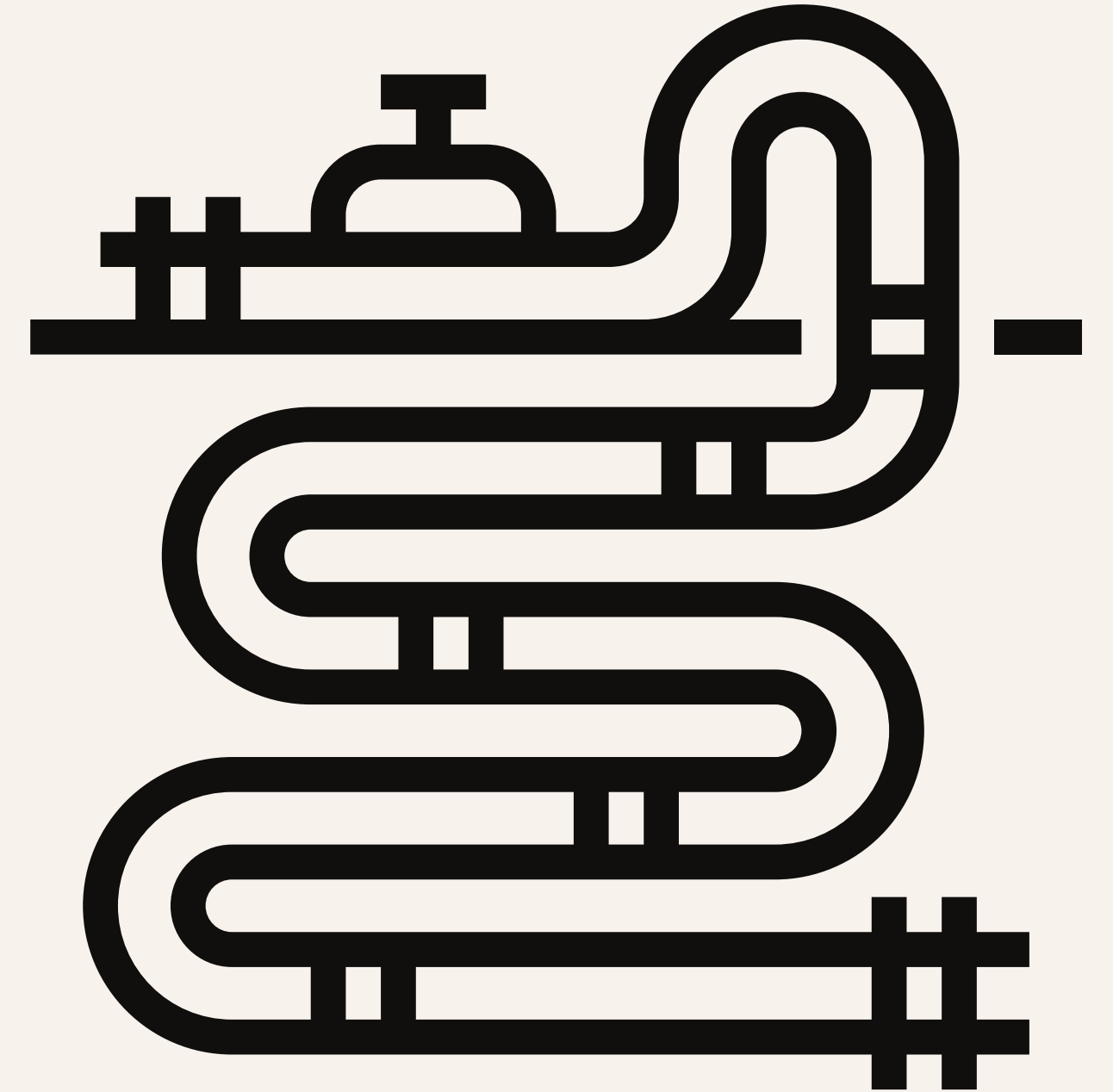
Turnbaugh, P. J., Ley, R. E.,
Hamady, M., Fraser-Liggett, C. M.,
Knight, R., & Gordon, J. I. (2007).
The human microbiome project.
Nature, 449(7164), 804-810.



Sindirim Boşluđu

Ađız - Anüs arasında
Metrelerce sindirim hattı / yüzey

Boşluđa tutunan:
Mikrobiyata

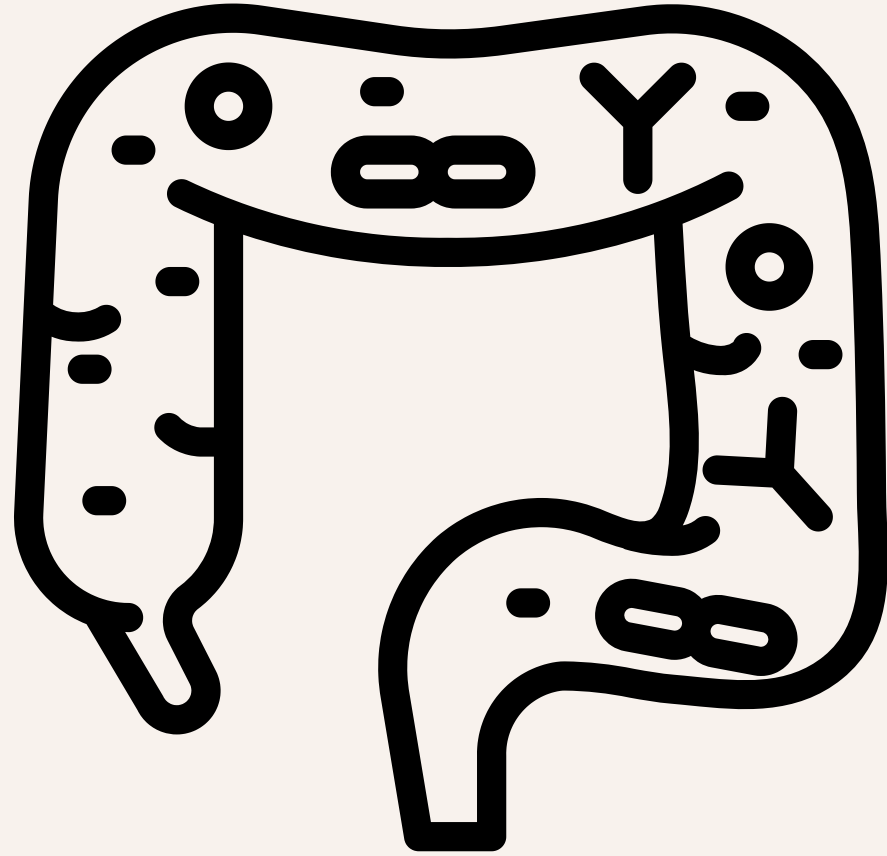


Sindirim Boşluğundaki Sıvı



Hipoklorik asit (Mide Asidi) - Safra asitleri - vb

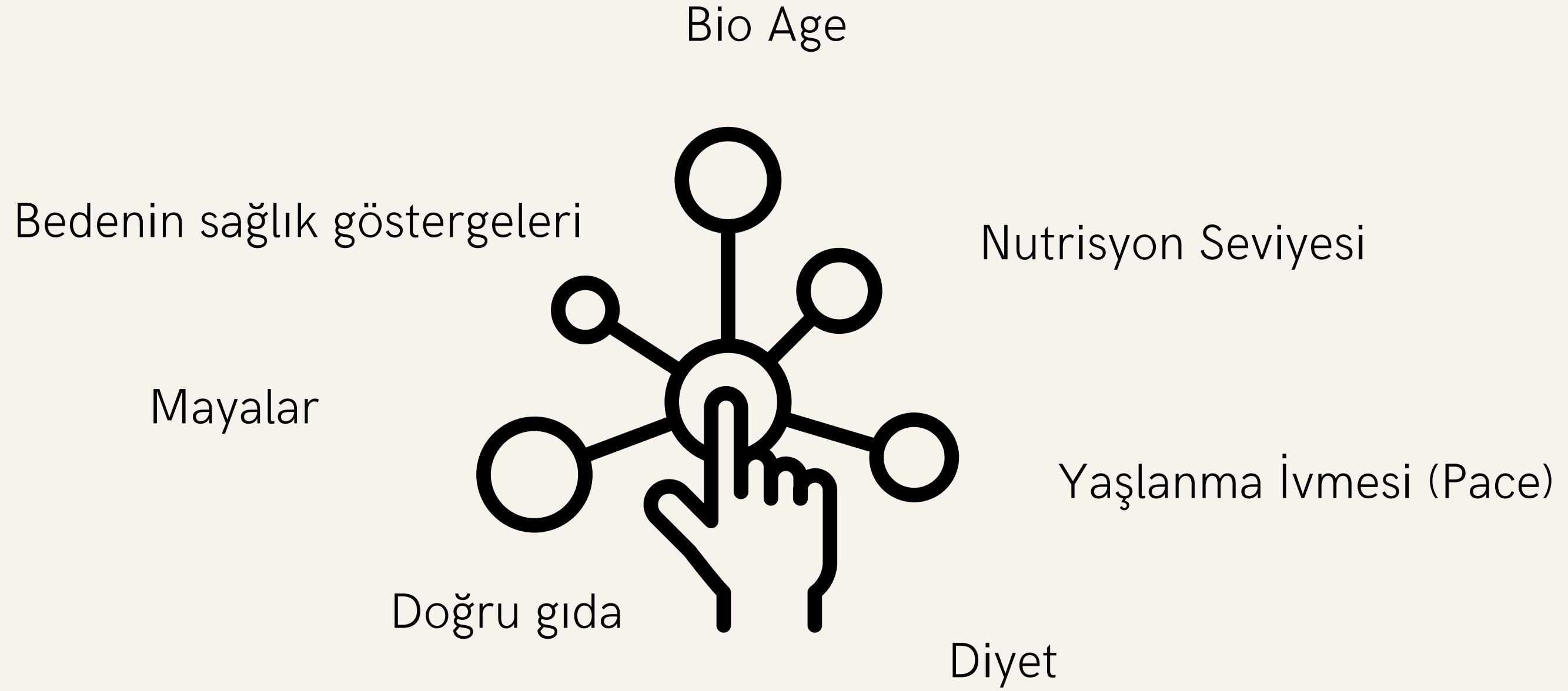
!Mikrobiyata için uygun besiyeri!



Mikrobiyom

Sindirim yapar
Mikronutrient sentezler
Mineral emer
Bağıřıklık oluřturur

-Maya-



Ruxton CH, Derbyshire E, Toribio-Mateas M. Role of fatty acids and micronutrients in healthy ageing: a systematic review of randomised controlled trials set in the context of European dietary surveys of older adults. *J Hum Nutr Diet.* 2016 Jun;29(3):308-24. doi: 10.1111/jhn.12335. Epub 2015 Aug 18. PMID: 26286890.

Jayanama, K., Theou, O., Blodgett, J.M. et al. Frailty, nutrition-related parameters, and mortality across the adult age spectrum. *BMC Med* 16, 188 (2018). <https://doi.org/10.1186/s12916-018-1176-6>

Solovev, I., Shaposhnikov, M., & Moskalev, A. (2020). Multi-omics approaches to human biological age estimation. *Mechanisms of ageing and development*, 185, 111192.

Calder PC, Carding SR, Christopher G, Kuh D, Langley-Evans SC, McNulty H. A holistic approach to healthy ageing: how can people live longer, healthier lives? *J Hum Nutr Diet.* 2018 Aug;31(4):439-450. doi: 10.1111/jhn.12566. Epub 2018 Jun 3. PMID: 29862589.

Antiaging Beslenme

Merak edilenler:
Aralıklı Oruç
Eliminasyon
Probiyotik kullanımı
Antibiyotik kullanımı
Mikrobiyata Analizi

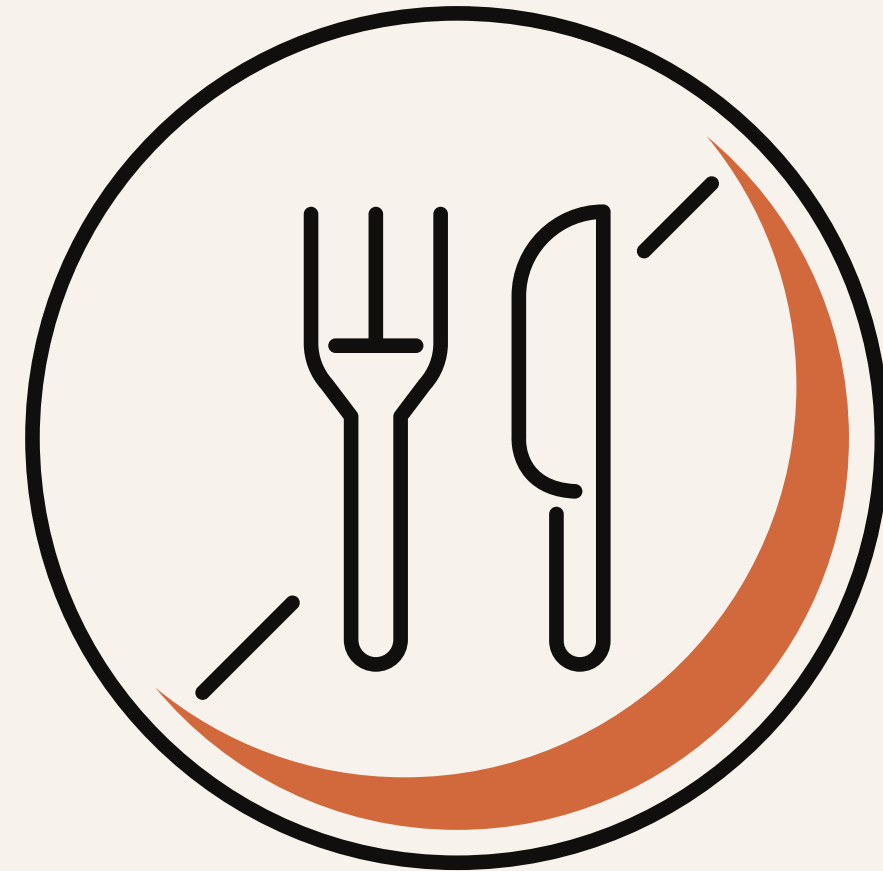


Aralıklı Oruç

Metabolik göstergeler
Mikrobiyata



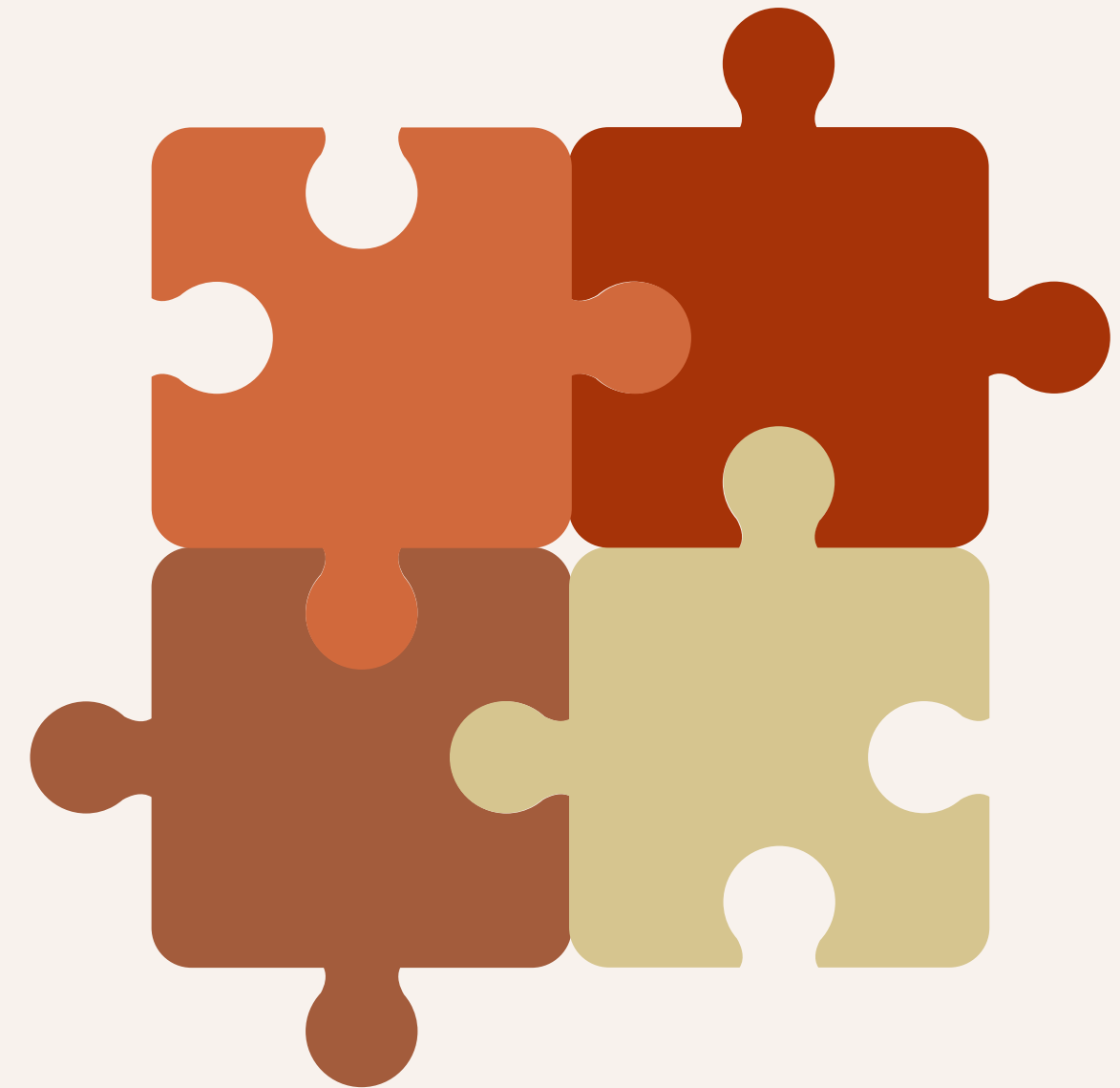
Eliminasyon



Antibiyotik-Probiyotik



Mikrobiyata Analizi



Antiaging Beslenme

Kolonik flora --> Lifli
Sağlıklı Mikrobiyata --> Probiyotik
Uzun süreli uyum
Antibiyotiksiz
Biyoçeşitliliği yüksek



