

Bölüm 1

FİZİKSEL EGZERSİZİN SİRKADİYEN RİTİM ÜZERİNDEKİ ETKİLERİ

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GİRİŞ

Yaşadığımız hayat içerisinde dünyanın belki de en dramatik olaylarından biri gece ve gündüz döngüsünün oluşması. Buna uygun olarak, neredeyse bütün canlılar, davranışlarında ve fizyolojilerinde günlük mecburi değişiklikler sergilemektedir. Bu günlük ritimler, dünyanın kendi eksenini etrafında dönmesiyle fiziksel çevrede meydana gelen 24 saatlik değişimlere basit bir yanıt değil, organizma içindeki bir zaman işleyişi sisteminden kaynaklanmaktadır. Bu zaman tutma sistemi veya biyolojik “saat”, organizmanın fiziksel çevrede gündüz ve gece ile ilişkili değişiklikleri önceden tahmin etmesine ve bunlara hazırlanmasına olanak tanımaktadır (Vitaterna ve ark., 2001). Böylece organizmanın doğru zamanda “doğru olanı yapmasını” sağlar. Biyolojik saat aynı zamanda içsel zamansal organizasyonunu ve içsel değişimlerin birbiri ile koordineli olarak gerçekleşmesini sağlamaktadır. Planlarımızı biyolojik ritimlere göre ayarlamak, uyku programlarımızı sabah erken kalkmayı gerektiren rutinelere programlamak gün içerisinde ki faaliyetlerimizi olumlu yönde etkilemektedir.

Modern sirkadiyen ritim biyoloji alanının başlangıcı, genetikçi Seymour Benzer ve öğrencisi Ron Konopka'nın, meyve sinekleri olan *Drosophila*'daki biyolojik zamanlamayı kodlayan genleri incelemekle meşgul oldukları 1970'lere kadar gitmektedir. CLK ve PER dahil olmak üzere *Drosophila*'daki çekirdek saat proteinlerinin birkaç homologu, memeli sirkadiyen zaman işleyişinde benzer roller oynamaktadır (Papazyan ve ark., 2016). Hall, Rosbash ve Young laboratuvarları, bu genle birlikte biyolojik zaman tutmanın çözülmüş moleküler mekanizmaları olarak sirkadiyen biyolojinin moleküler çağını yaratmıştır. PER adlı gen, Jeffrey

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lerine karşı koymada, yaşam kalitesini koruyabilmede, kardivasküler hastalıkların önlenmesinde ve hormonal dengenin sağlanmasında önemli bir tedavi yöntemi olarak düşünülmektedir. Sirkadiyen ritmin etkilerini konu alacak çalışmaların; egzersiz modeli ve yoğunluğunun yanı sıra branşa özgü antrenman metodlarına da odaklanması sporcuların performansların daha yüksek seviye çıkmasına katkı sağlayacağı düşünülmektedir.

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