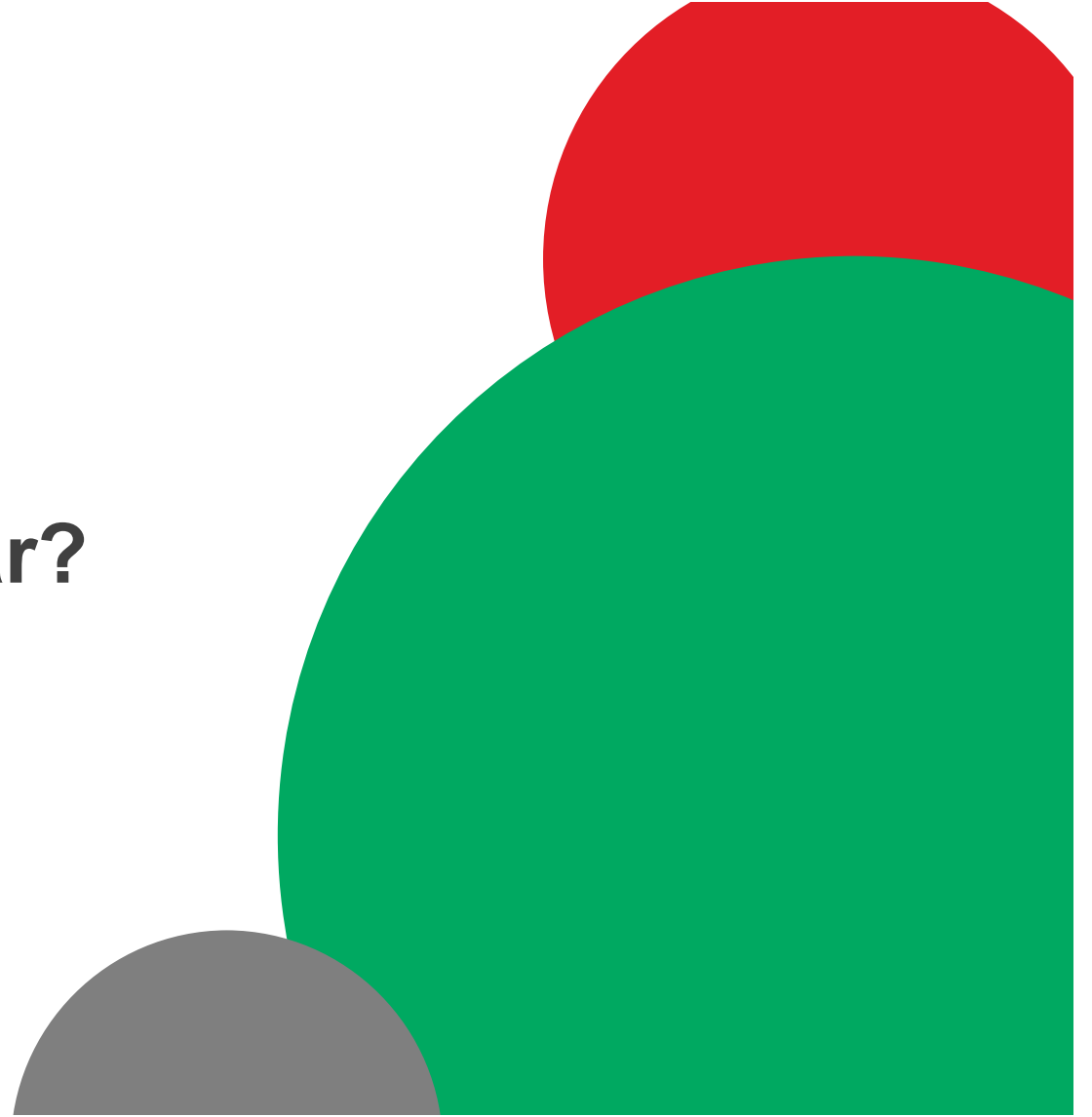


Koenzim Q10

Nedir, Ne İşe Yarar?

(1)



■ Koenzim Q10



- **Koenzim Q10**, diyetimizin normal bir parçası ve aynı zamanda organizmada endojen olarak da sentezlenen **yağda**

çözünen vitamin benzeri bir moleküldür.

- Koenzim Q10, mitokondriyal oksidatif solunum zincirinde elektron transferine katılan, hücre metabolizmasını ve **hücre**

solunumunu aktive eden, sitoplazmik redoks potansiyelini düzenleyen ve süperoksit oluşumunu engelleyen bir moleküldür.

- Fernandes MSS, Fidelis DEDS, Aidar FJ, Badiou G, Greco G, Cataldi S, Santos GCJ, de Souza RF, Ardighi LP. Coenzyme Q10 Supplementation in Athletes: A Systematic Review. *Nutrients*. 2023 Sep 15;15(18):3990.
- Hersant H, He S, Maliha P, Grossberg G. Over the Counter Supplements for Memory: A Review of Available Evidence. *CNS Drugs*. 2023 Sep;37(9):797-817.
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- Soleimani Damaneh M, Fatahi S, Aryaeian N, Bavi Behbahani H. The effect of coenzyme Q10 supplementation on liver enzymes: A systematic review and meta-analysis of randomized clinical trials. *Food Sci Nutr*. 2023 Jun 7;11(9):4912-4925.
- Hajilulian G, Heshmati J, Jafari Karegar S, Sepidarkish M, Shokri A, Shidfar F. Diabetes, Age, and Duration of Supplementation Subgroup Analysis for the Effect of Coenzyme Q10 on Oxidative Stress: A Systematic Review and Meta-Analysis. *Complement Med Res*. 2021;28(6):557-570.
- Mizuno K, Sasaki AT, Watanabe K, Watanabe Y. Ubiquinol-10 Intake Is Effective in Relieving Mild Fatigue in Healthy Individuals. *Nutrients*. 2020 Jun 2;12(6):1640.
- Mantle D, Heaton RA, Hargreaves IP. Coenzyme Q10 and Immune Function: An Overview. *Antioxidants (Basel)*. 2021 May 11;10(5):759.
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■ Koenzim Q10



- Fiziksel aktivite ve **egzersizin kronik ve kardiyometabolik hastalıklar ile erken ölüm riskinin azaltılması** da dahil olmak üzere insan sağlığına sağladığı faydalar çok iyi bilinmektedir.
- **Koenzim Q10 takviyesi**, antioksidan, kan basıncını düzenleyen, insülin direncini düzelter ve egzersiz kapasitesini artıran **biyolojik etkilere katkı sağlar.**
- Fibromiyalji, migren, diyabet, kanser, mitokondriyal hastalıklar, kas hastalıkları, nörodejeneratif hastalıklar ve kalp yetmezliği gibi hastalıklar **dolaşımdaki Koenzim Q10 seviyelerinin azalmasıyla ilişkilidir.**

■ Fernandes MSS, Fidelis DEES, Aïdar FJ, Badiou G, Greco G, Cataldi S, Santos GCJ, de Souza RF, Ardighò LP. Coenzyme Q10 Supplementation in Athletes: A Systematic Review. *Nutrients*. 2023 Sep 15;15(18):3990.
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■ Soleimani Damaneh M, Fatahi S, Aryaeian N, Bavi Behbahani H. The effect of coenzyme Q10 supplementation on liver enzymes: A systematic review and meta-analysis of randomized clinical trials. *Food Sci Nutr*. 2023 Jun 7;11(9):4912-4925.
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■ Mizuno K, Sasaki AT, Watanabe K, Watanabe Y. Ubiquinol-10 Intake Is Effective in Relieving Mild Fatigue in Healthy Individuals. *Nutrients*. 2020 Jun 2;12(6):1640.
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■ Koenzim Q10



- **Orta ila şiddetli düzeyde kalp yetmezliği** olan hastalarda standart tedaviye ek olarak Koenzim Q10 takviyesi,

semptomların azalması ve majör advers kardiyovasküler olayların azalması ile ilişkili bulunmuştur.

- Koenzim Q10 takviyesi, konjestif kalp yetmezliği hastalarında, **fonksiyonel kapasiteyi, endotel fonksiyonunu ve sol**

ventrikülün kasılmasını iyileştirebilir.

- Koenzim Q10 takviyesinin hiperlipidemisi olan tip2 diyabet hastalarında **damar endotel fonksiyonunu** da iyileştirdiği

gösterilmiştir.

- Fernandes MSS, Fidelis DEES, Aïdar FJ, Badiou G, Greco G, Cataldi S, Santos GCJ, de Souza RF, Ardighò LP. Coenzyme Q10 Supplementation in Athletes: A Systematic Review. *Nutrients*. 2023 Sep 15;15(18):3990.
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■ Koenzim Q10



- Sağlıklı yaşlı hastalarda ve **diyabet, hipertansiyon, iskemik kalp hastalığı olan yaşlı hastalarda**, Koenzim Q10 takviyesinin selenyum ile kombine edildiğinde kardiyovasküler ölüm riskini azaltabileceğine dair kanıtlar vardır.
- 30 ila 300 mg Koenzim Q10 takviyesinin antioksidan aktiviteyi ve anaerobik performansı güçlendirdiği, 17 yaş ve üstü sporcularda **oksidatif stres ve karaciğer hasarı** ile bağlantılı belirteçleri azalttığı yapılan klinik çalışmalar ile gösterilmiştir

- Fernandes MSS, Fidelis DEDS, Aidar FJ, Badiou G, Greco G, Cataldi S, Santos GCJ, de Souza RF, Ardighi LP. Coenzyme Q10 Supplementation in Athletes: A Systematic Review. *Nutrients*. 2023 Sep 15;15(18):3990.
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■ Koenzim Q10



- Hafif yorgunluğu olan sağlıklı bireylerde Ubikinol takviyesinin **uykululuęu azalttıęı, rahatlatıcı bir etki sağladıęı ve yaşam**

kalitesinin iyileştirilmesine katkıda bulunduęu gösterilmiřtir.

- Koenzim Q10, güçlü bir antioksidandır ve mitokondride enerji üretimi için gereklidir. Klinik veriler, **koenzim Q10'un**

karacięer fonksiyonu üzerinde bazı yararlı etkileri olduęunu göstermiřtir.

- Koenzim Q10 takviyesi, **ALT, AST ve GGT enzim** seviyelerini önemli ölçüde iyileřtirir ve karacięer fonksiyonunu olumlu

yönde etkileyebilir.

- Fernandes MSS, Fidelis DEDES, Aidar FJ, Badiou G, Greco G, Cataldi S, Santos GCJ, de Souza RF, Ardigo LP. Coenzyme Q10 Supplementation in Athletes: A Systematic Review. *Nutrients*. 2023 Sep 15;15(18):3990.
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▪ Koenzim Q10



- Koenzim Q10, **E ve C vitamini gibi diğer antioksidanları yenileme ve antioksidan enzimleri artırma yeteneği** dahil

olmak üzere çeşitli mekanizmalar yoluyla oksidasyon durumuna karşı güçlü bir antioksidan etkiye sahiptir.

- Koenzim Q10, **bağışıklık sisteminin işleyişi** için gerekli olan, mitokondriyal solunum zincirinde elektron taşıyıcısı olmak,

oksidatif fosforilasyon sürecinde ATP üretimi sağlamak ve lipitte çözünen bir antioksidan olarak hücreyi serbest radikal

kaynaklı oksidasyona karşı korumak gibi bir dizi önemli role sahiptir.

- Fernandes MSS, Fidelis DEDS, Aïdar FJ, Badiou G, Greco G, Cataldi S, Santos GCJ, de Souza RF, Ardighò LP. Coenzyme Q10 Supplementation in Athletes: A Systematic Review. *Nutrients*. 2023 Sep 15;15(18):3990.
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- Hajililian G, Heshmati J, Jafari Karegar S, Sepidarkish M, Shokri A, Shidfar F. Diabetes, Age, and Duration of Supplementation Subgroup Analysis for the Effect of Coenzyme Q10 on Oxidative Stress: A Systematic Review and Meta-Analysis. *Complement Med Res*. 2021;28(6):557-570.
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