

# Omega-3s and Brain Health:

*An update on the  
science*

Elana Natker, MS, RD  
08 December 2023  
ETKİN Eczacılık Derneği  
Antalya, Turkey

**G** *lobal*

**O** *rganization*

*for*

**E** *PA*

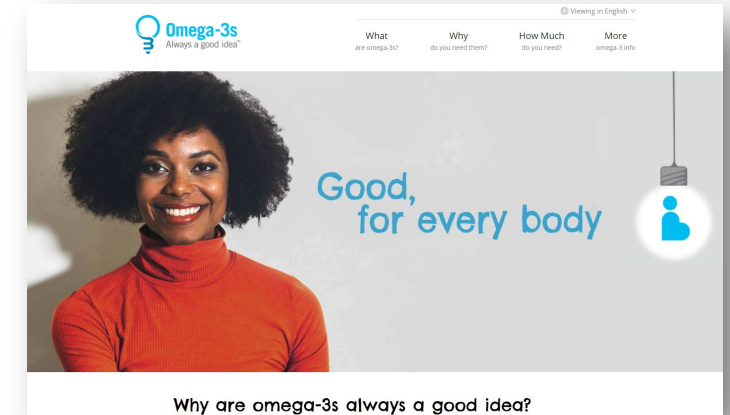
*and*

**D** *H*A     *Omega-3s*

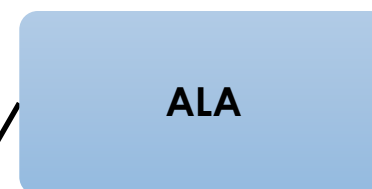
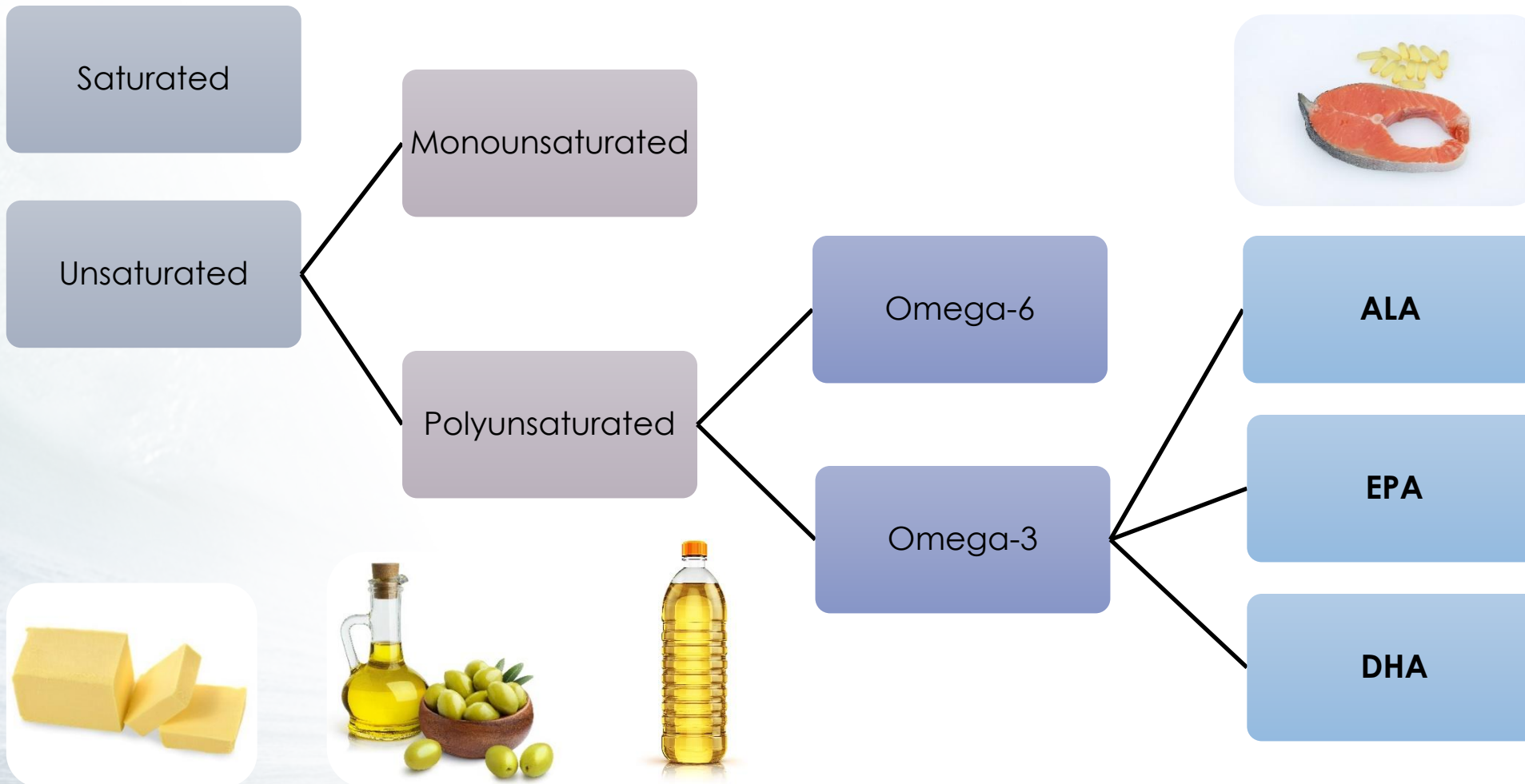
# A Bit of Background...



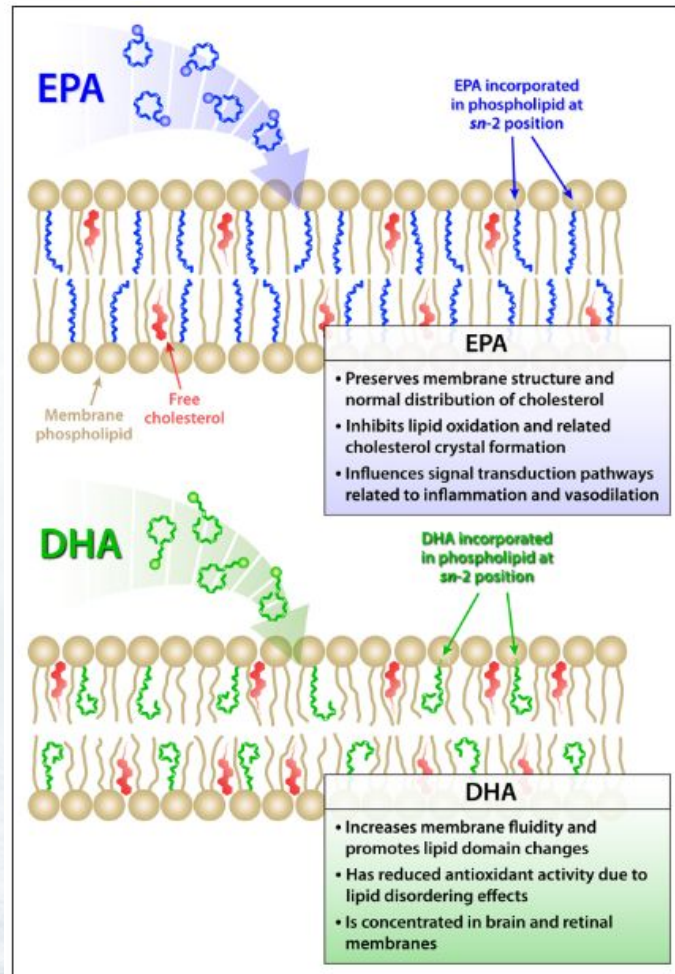
- Goals:
  - Increase awareness of the science-backed benefits of **EPA and DHA omega-3s**
  - Ensure the industry is producing quality omega-3 products that consumers can trust
- Online at:
  - [GOEDomega3.com](http://GOEDomega3.com) (Members)
  - [AlwaysOmega3s.com](http://AlwaysOmega3s.com) (Consumers)
  - [FatsOfLife.com](http://FatsOfLife.com) (Health Professionals)



# Fats: Quick Overview



# EPA/DHA in the Body



# Science-Backed Benefits of Omega-3s



# Omega-3s and Brain Health

- Cognitive Health
- Alzheimer's Disease
- Depression



# Brain Health Research is Complicated

- Participants
  - Age, genetics, health status
- Types of Assessments
  - Functional indicators
  - Clinical tests
  - Diagnostic
- Study design
  - Study type
  - Varying dosages
  - Length of supplementation
  - Additive/adjunctive therapy

**MONTREAL COGNITIVE ASSESSMENT (MOCA)**  
Version 7.1 Original Version

NAME: \_\_\_\_\_ Date of birth: \_\_\_\_\_  
Education: \_\_\_\_\_ Sex: \_\_\_\_\_ DATE: \_\_\_\_\_

VISUOSPATIAL / EXECUTIVE		Copy cube	Draw CLOCK (Ten past eleven)	POINTS			
				___/5			
<p><b>NAMING</b></p>			Contour [ ] Numbers [ ] Hands [ ]	___/3			
<p><b>MEMORY</b></p> <p>Read list of words, subject must repeat them. Do 2 trials, even if 1st trial is successful. Do a recall after 5 minutes.</p>		FACE	VELVET	CHURCH	DAISY	RED	No points
1st trial							
2nd trial							
<p><b>ATTENTION</b></p> <p>Read list of digits (1 digit/ sec.). Subject has to repeat them in the forward order. [ ] 2 1 8 5 4 Subject has to repeat them in the backward order. [ ] 7 4 2</p>							___/2
<p>Read list of letters. The subject must tap with his hand at each letter A. No points if ≥ 2 errors.</p>							___/1
<p>[ ] FBACMNAAJKLBAFAKDEAAAJAMOF AAB</p>							
<p>Serial 7 subtraction starting at 100 [ ] 93 [ ] 86 [ ] 79 [ ] 72 [ ] 65</p>							___/3
<p>4 or 5 correct subtractions: <b>3 pts.</b> 2 or 3 correct: <b>2 pts.</b> 1 correct: <b>1 pt.</b> 0 correct: <b>0 pt.</b></p>							
<p><b>LANGUAGE</b></p> <p>Repeat: I only know that John is the one to help today. [ ] The cat always hid under the couch when dogs were in the room. [ ]</p>							___/2
<p>Fluency / Name maximum number of words in one minute that begin with the letter F [ ] _____ (N ≥ 11 words)</p>							___/1
<p><b>ABSTRACTION</b></p> <p>Similarity between e.g. banana - orange = fruit [ ] train - bicycle [ ] watch - ruler</p>							___/2
<p><b>DELAYED RECALL</b></p> <p>Has to recall words <b>WITH NO CUE</b> [ ] [ ] [ ] [ ] [ ]</p>		FACE	VELVET	CHURCH	DAISY	RED	Points for UNCUED recall only
<p>Category cue [ ] [ ] [ ] [ ] [ ]</p>							
<p>Multiple choice cue [ ] [ ] [ ] [ ] [ ]</p>							
<p><b>Optional</b></p>							
<p><b>ORIENTATION</b></p> <p>[ ] Date [ ] Month [ ] Year [ ] Day [ ] Place [ ] City</p>							___/6
<p>© Z.Nasreddine MD <a href="http://www.mocatest.org">www.mocatest.org</a> Normal ≥ 26 / 30</p>		<p>Administered by: _____</p>		<p>TOTAL</p>		<p>___/30</p>	
						<p>Add 1 point if ≤ 12 yr edu</p>	

# Clinical Study Database

- <http://csd.goedomega3.com>
- Catalog of all EPA/DHA omega-3 human clinical trials

**GOED** Clinical Study Database

Abstract Search

arj

Search

Select a Study Type

— Select Study Type —

Select

Abstract Search | Advanced Search | Login

Study List | Keywords | Influencers | Journals

Type your **term of interest** into the database and select a **study type**

00:52

ILLUMINATE THE SCIENCE  
**GOED** CLINICAL STUDY DATABASE

**Examining the Science  
on Brain Health**

Powered by GOED's Clinical Study Database

# Omega-3s and Cognition

- 377 total studies (213 were interventional)
- High heterogeneity among studies
- Meta-analyses suggest intake >1g/day EPA+DHA significantly improves episodic memory in older adults with mild cognitive impairment



Yurko-Mauro K., Alexander D.D., Van Elswyk M.E. Docosahexaenoic acid and adult memory: A systematic review and meta-analysis. *PLoS ONE*. 2015;10:e0120391.

Derbyshire E. Brain Health across the Lifespan: A Systematic Review on the Role of Omega-3 Fatty Acid Supplements. *Nutrients*. 2018 Aug 15;10(8):1094. doi: 10.3390/nu10081094.

# Omega-3s and Alzheimer's Disease

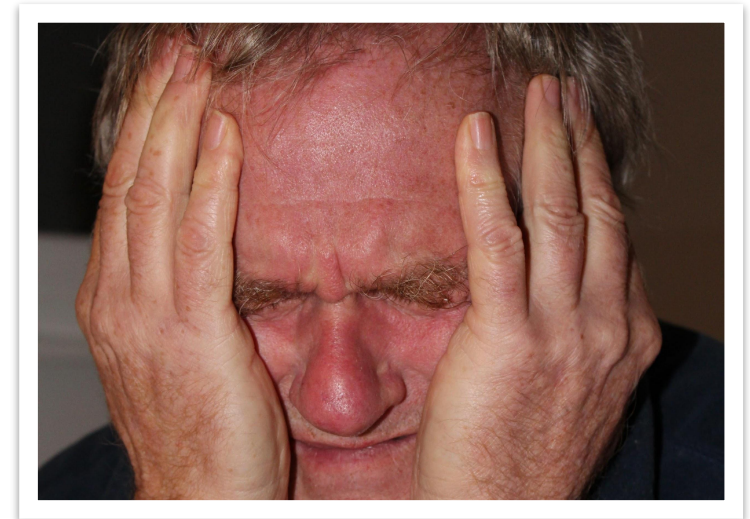
- Alzheimer's: 117 total studies (53 interventional)
- Dementia: 136 total studies (62 interventional)
- Long-term supplementary EPA/DHA intake was significantly associated with a 64% reduced risk for Alzheimer's disease



Wei BZ, Li L, Dong CW, Tan CC; Alzheimer's Disease Neuroimaging Initiative; Xu W. The Relationship of Omega-3 Fatty Acids with Dementia and Cognitive Decline: Evidence from Prospective Cohort Studies of Supplementation, Dietary Intake, and Blood Markers. *Am J Clin Nutr.* 2023 Jun;117(6):1096-1109. doi: 10.1016/j.ajcnut.2023.04.001. Epub 2023 Apr 5. PMID: 37028557; PMCID: PMC10447496.

# Omega-3s and Depression

- 343 total studies (179 interventional)
- Research tends to show effect when EPA/DHA is adjunct to therapy/treatment



Kelaiditis, C. F., Gibson, E. L., & Dyllal, S. C. (2023). Effects of long-chain omega-3 polyunsaturated fatty acids on reducing anxiety and/or depression in adults; A systematic review and meta-analysis of randomised controlled trials. *Prostaglandins, leukotrienes, and essential fatty acids*, 192, 102572. <https://doi.org/10.1016/j.plefa.2023.102572>

# Omega-3s and Depression

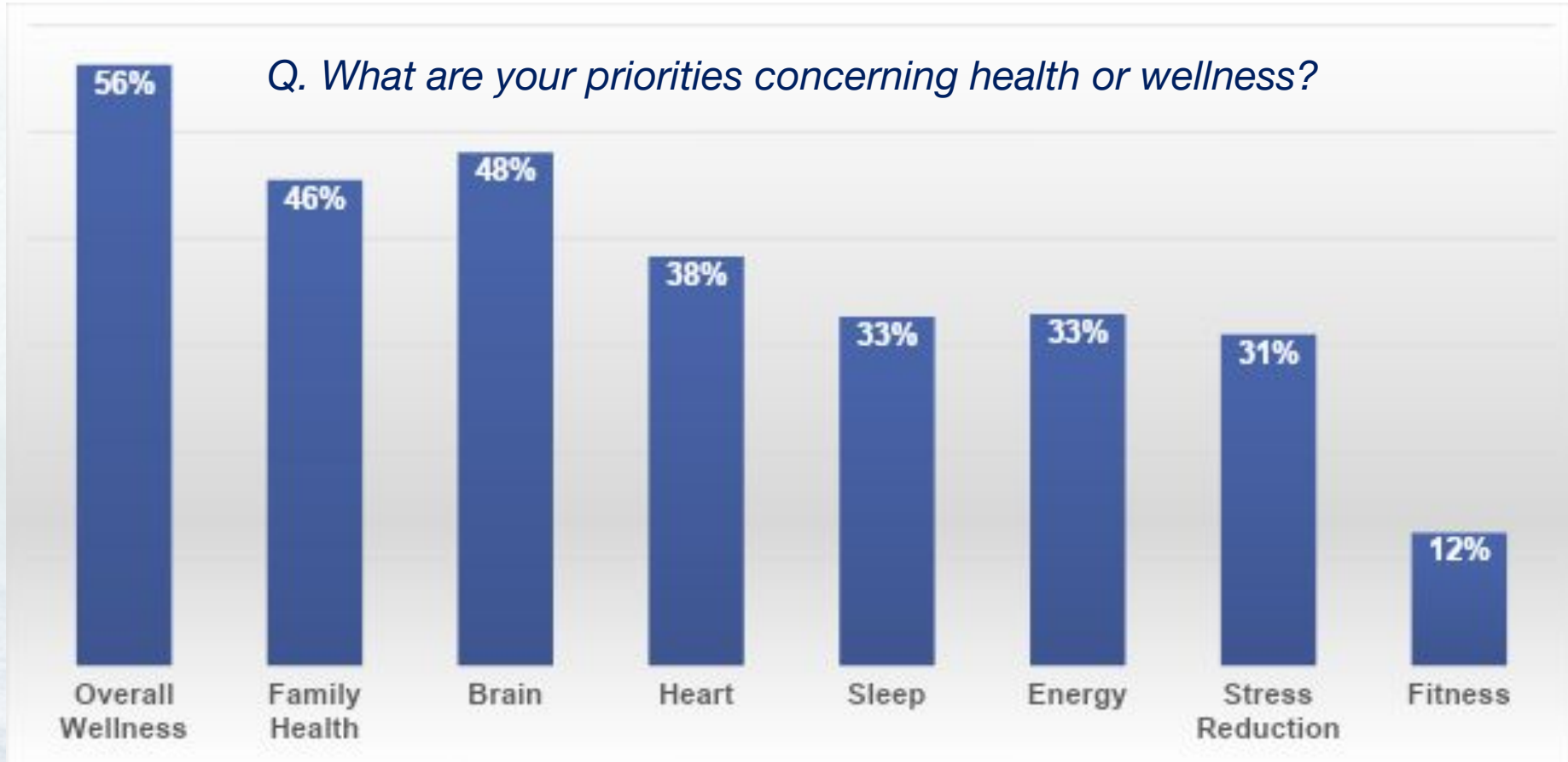
Categories	Clinical recommendations
General concepts	<p>Clinicians who use n-3 PUFA treatments in major depressive disorder (MDD) should do so only after applying a clinical interview to confirm the diagnosis and assess mental status and relevant physical conditions, including fish hypersensitivities</p> <p>n-3 PUFAs are better used as an adjunctive treatment than monotherapy for adult MDD</p> <p>n-3 PUFAs can be efficacious and safe, both for acceleration and augmentation</p> <ul style="list-style-type: none"> <li>- Acceleration = adding n-3 at the beginning of treatment concurrently with another antidepressant</li> <li>- Augmentation = adding n-3 when a prior antidepressant's effect is inadequate</li> </ul> <p>Both pure EPA and EPA/DHA (ratio &gt;2:1) combinations are effective as a potential treatment of MDD</p> <p>n-3 PUFAs are considered effective as an adjunctive treatment for acute major depressive episodes, but more evidence is needed for recurrent major depressive episodes</p>
Acute treatment strategy	<p>The recommended therapeutic dosages should aim for 1–2 g/day of total EPA from pure EPA or 1–2 g/day EPA from an EPA/DHA (&gt;2:1) combination</p> <p>The dose is recommended to be increased in 2 weeks for non- or partial responders, and titrated up to the maximum dose in 4–6 weeks if tolerable</p> <p>For nonresponders, it is recommended to evaluate the quality of n-3 PUFA supplementary products</p>
Recurrence and prevention	<p>n-3 PUFAs could be recommended as a potential prophylactic treatment for high-risk populations (alongside standard medical care)</p> <p>The duration of acute n-3 PUFA treatment could be extended to include maintenance treatment to potentially prevent recurrence</p>
Safety	<p>It is recommended to monitor adverse effects systematically, including the gastrointestinal and dermatological conditions, and obtaining a comprehensive metabolic panel in patients receiving higher doses of n-3 PUFAs; if clinicians are not familiar with high-quality n-3 PUFAs in the market, they should consider prescription n-3 fatty acid products (RxOM3FAs)</p>
Special populations	<p>n-3 PUFAs could be prescribed for MDD patients who are overweight (BMI &gt;25) and/or have elevated levels of inflammatory markers; they may also have a role in women with perinatal MDD, and elderly and children and adolescents with MDD</p>

Guu TW et al. International Society for Nutritional Psychiatry Research Practice Guidelines for Omega-3 Fatty Acids in the Treatment of Major Depressive Disorder. *Psychother Psychosom* (2019) 88 (5): 263–273.

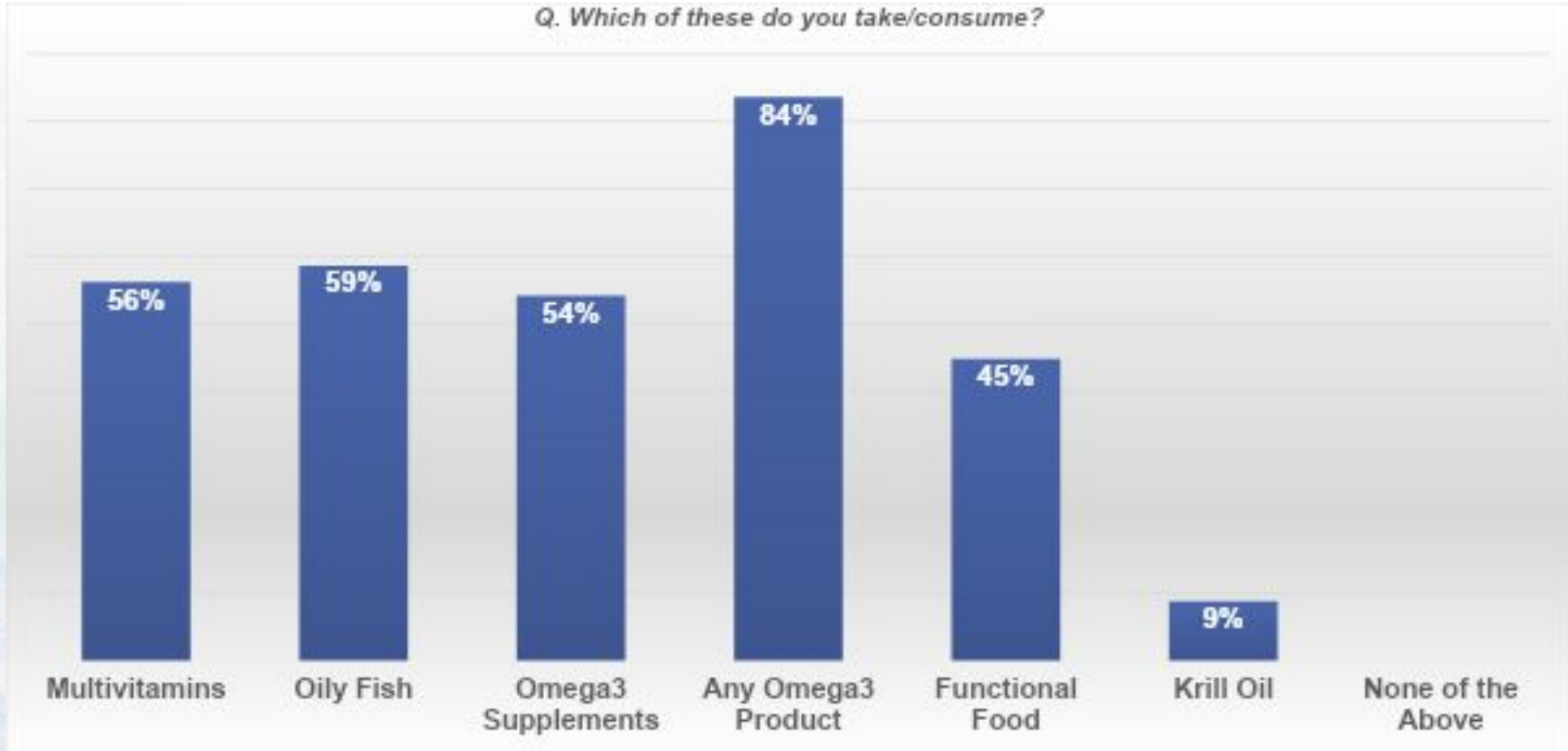
# The Turkish Consumer



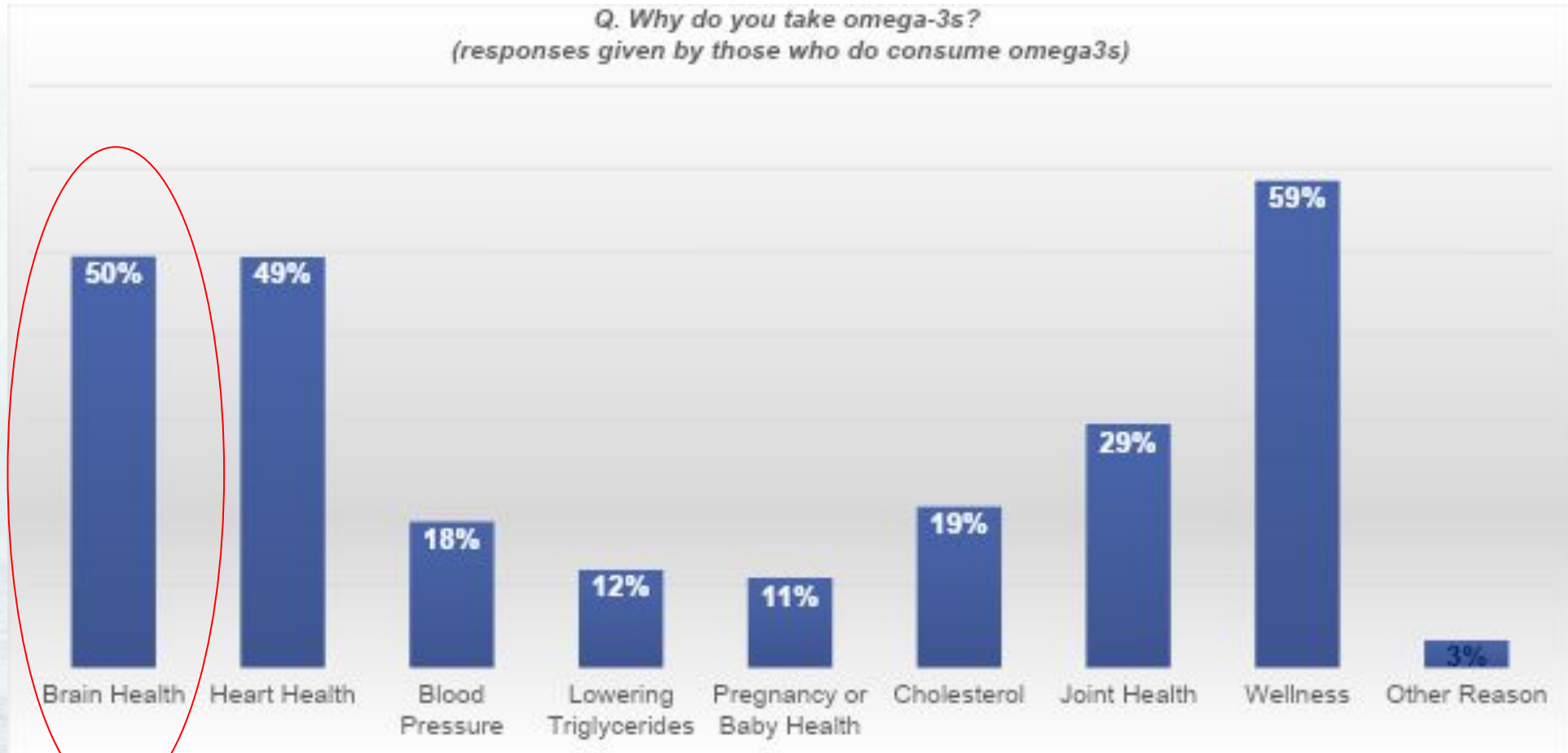
# Health Priorities of Turkish Consumers



# Sources of Omega-3s



# Reasons for Taking Omega-3s



Toluna market research on Turkish consumers (n=1000), 2021

# Influences



# Helping Customers Increase Their Omega-3 Intake



# Omega-3 Intake Needs

Organization	Recommendation
<b>EFSA</b> (European Food Safety Authority) <sup>3</sup>	250 mg EPA+DHA/day
<b>UN FAO</b> (United Nations Food and Agricultural Organization) <sup>2</sup>	250-2000 mg/day
<b>ISSFAL</b> (International Society for the Study of Fatty Acids and Lipids) <sup>1</sup>	At least 500 mg EPA+DHA/ day
<b>GOED</b>	At least 500 mg EPA+DHA/day

1. ISSFAL PUFA Recommendations: <https://www.issfal.org/pufa-recommendations>.

2. Fats and Fatty Acids in Human Nutrition: report of an expert consultation. FAO and Food and Nutrition Paper 91. 2010. ISSN 0254-4725.

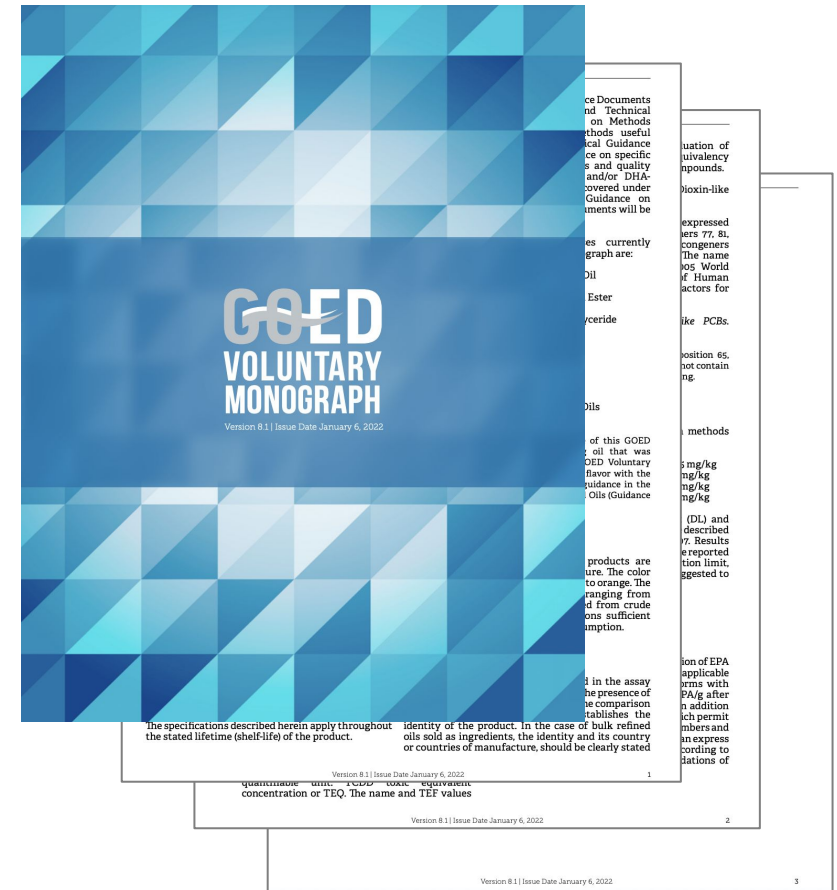
3. EFSA Panel on Dietetic Products, Nutrition, and Allergies (NDA); Scientific Opinion on Dietary Reference Values for fats, including saturated fatty acids, polyunsaturated fatty acids, monounsaturated fatty acids, trans fatty acids, and cholesterol. EFSA Journal 2010; 8(3):1461. [107 pp.]. doi:10.2903/j.efsa.2010.1461. Available online: [www.efsa.europa.eu](http://www.efsa.europa.eu)

# Why GOED

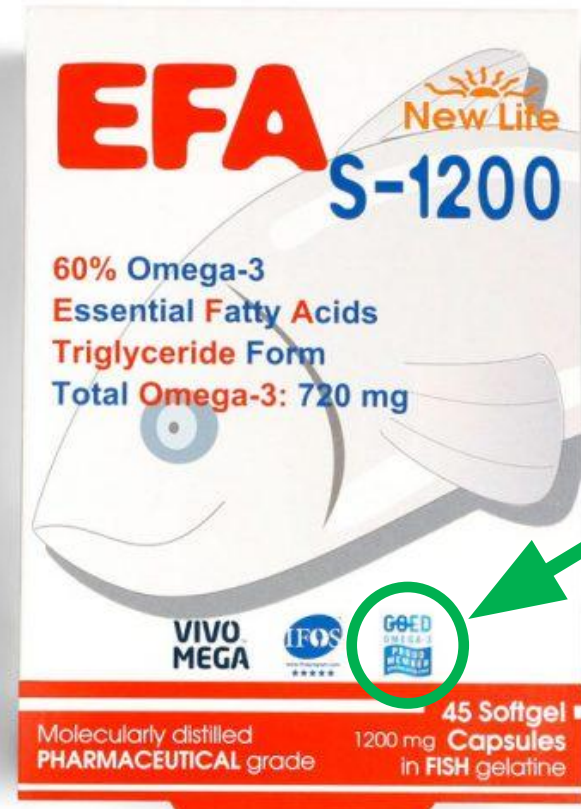


# Voluntary Monograph

- The omega-3 industry's **standard of quality** since 2002
- Standards for quality and ethics as strict or stricter than others found worldwide
- All members must abide



# Proud Member Logo



# GOED Proud Member Products in Türkiye

Türkiye'de bulunan GOED üyesi Omega-3 markaları



## EPA ve DHA Omega-3 Ürünleri Güvенеbileceğiniz

GOED üyeleri, en azından dünya çapında geçerli düzenlemeler kadar katı olan önemli spesifikasyonlar dahil olmak üzere, kalite ve etik standartlarını koruma taahhüdünde bulunmuştur. GOED'in etik standardı, üyelerin ürünleri hakkında doğru bilgi vermesini ve etik bir şekilde davranmasını gerektirir.

Türkiye'de mağazalarda veya internette bulabileceğiniz ürünlerden bazıları burada. Bir sonraki sayfada, dünya çapında satılan omega-3 diyet takviyeleri yapan GOED üye şirketlerinin tam listesi bulunmaktadır.



Carlson  
Nutritional Supplements

Dynavit

easyVit®

HERBALIFE  
NUTRITION

MÖLLERS

NATURE'S BOUNTY

New Life  
Essential Fatty Acid Supplements

NORDIC  
NATURALS®

Norwegian Health

now  
Live Happy. Live Healthy. Live NOW.

nutriway

omegavia  
ultra-concentrated omega-3

GOED Omega-3'ün kalite ve etik standartları hakkında daha fazla bilgi edinmek için şu adresi ziyaret edin: [goedquality.com](http://goedquality.com).

# Commitment to Türkiye

## OMEGA 3 ALIMINI NE KADAR FAZLA O KADAR İYİ!

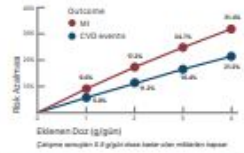
Dünyada omega 3 alımı oldukça düşüktür. Yeni çalışmalar<sup>1</sup>, kardiyovasküler riskleri düşürmek için omega 3 alımının artırılmasına ihtiyaç duyulabileceğini belirtmektedir.

DÜNYADA İNSANLARIN %80'i DÜŞÜK EPA VE DHA SEVİYELERİNE SAHİPTİR.<sup>2</sup>

Eikosapentaenoik Asit (EPA) = Deniz kaynaklı en faydalı  
Dokosaheksaenoik Asit (DHA) = iki omega 3 türü

Mayo Clinic Proceedings'te yayınlanan ve 40 klinik çalışmayı kapsayan meta analiz çalışmasına göre, EPA/DHA takviyesi aşağıdaki kardiyovasküler durumlardaki düzeylerle ilişkilendirilmiştir:

- Ölümcül miyokardial enfarktüs riskinde %35 azalma\*
- Miyokardial enfarktüs riskinde %13 azalma\*
- Koroner kalp hastalıkları riskinde %10 azalma\*
- Koroner kalp hastalıklarından ölüm riskinde %9 azalma\*
- Kardiyovasküler hastalıklarda %5 azalma



EPA + DHA'nın koruyucu etkisi dozla beraber artmaktadır. Günde 1 gram ek EPA+DHA alımı sonuçları aşağıdaki gibidir:

- Miyokardial enfarktüs riskinde %9 azalma\*
- Kardiyovasküler hastalık riskinde %5.8 azalma\*

\*% İstatistiksel olarak anlamlı

EPA ve DHA omega 3 yağ asitleri doğal olarak yağlı balıklarda bulunmaktadır fakat sadece beslenme ile kardiyovasküler sistemi korumak zordur. Gıda takviyeleri ya da reçeteli omega 3'ler bu anlamda omega 3 alımını arttırmak için doğru alternatiflerdir. Hastalar her gün günlük 1000 mg EPA + DHA alımını hedeflemelidir.

## EPA ve DHA Omega-3 Yağ Asitlerini Almanız İçin 9 Sebep



EPA ve DHA Omega-3 yağ asitleri, vücudun her hücresinde bulunan yaşamsal besin öğeleridir. EFSA (Avrupa Gıda Güvenliği Otoritesi), EPA ve DHA'nın çok çeşitli sağlık faydalarını desteklediği konusundaki önemini kabul etmektedir. Avrupa Birliği'nden onaylı sağlık beyanı almak, özenle yürütülmesi gereken zorlu bir süreçtir fakat, EPA ve DHA Omega-3 yağ asitlerinin arkasındaki bilimsel çalışmalar, Avrupa Birliği'ni tek değil tam 9 onaylı sağlık beyanına ikna edebilmiştir.



1. Anne tarafından DHA alımı, fetüste ve emzirilen bebeklerdeki normal göz gelişimine katkıda bulunur.<sup>1</sup>

2. Anne tarafından DHA alımı, fetüsün ve emzirilen bebeklerin normal beyin gelişimine katkıda bulunur.<sup>1</sup>

3. 12 aya kadar olan bebeklerde DHA alımı, normal görme gelişimine katkıda bulunur.<sup>2</sup>

5/6. DHA ve EPA<sup>4</sup> (ve DHA<sup>5</sup> tek başına) normal kan trigliserid seviyelerinin korunmasına katkıda bulunur.

4. EPA ve DHA, kalbin normal fonksiyonuna katkıda bulunur.<sup>3</sup>

7. DHA ve EPA normal kan basıncının korunmasına katkıda bulunur.<sup>6</sup>

8. DHA, normal beyin fonksiyonlarının korunmasına katkıda bulunur.<sup>7</sup>

9. DHA, normal görmenin korunmasına katkıda bulunur.<sup>7</sup>

## Omega-3 ve Kanama Etkisi ile İlgili GERÇEKLER!

Omega-3 yağ asitleri ile ilgili bahsedilen kanama riski bilimsel araştırmalarda desteklenmemektedir.<sup>1,2</sup>

Araştırmalar, 5g ve üzeri EPA & DHA alımının kanama riskini arttırmadığını göstermektedir.<sup>1,4</sup>

Son yapılan çalışmalar, ameliyat öncesinde kandaki omega 3 seviyesi yüksek bulunan kişilerin ameliyat sırasında ve sonrasında kanama riskinin yükselmediğini göstermektedir.<sup>3</sup>

FDA raporlarında, ABD'de, balık yağına bağlı görülen anormal veya uzun süreli kanama yan etkisi 'kolayca' olarak tespit edilmiştir.<sup>5</sup>

Ayrıca araştırmalar omega-3'ün kalp sağlığını koruyucu etkisini de desteklemektedir. EPA ve DHA Omega-3 Yağ Asitleri:

- ♥ Kardiyak ölüm riskini azaltmaya<sup>1</sup>
- ♥ Trigliserit seviyesini düşürmeye<sup>4</sup>
- ♥ Kan basıncını düşürmeye<sup>6</sup>
- ♥ Kanama riskini arttırmadan, kanda plıhtı oluşum riskini düşürmeye yardımcıdır<sup>3</sup>

Günlük, yeterli miktarda alınan omega-3 takviyesinin faydaları kanama riskine kıyasla çok daha ağır basmaktadır.

Hedef, omega-3 takviyesi veya balık tüketimi yoluyla günde minimum 500mg EPA + DHA alınmasıdır.



### Referanslar:

1. Wang H, Gao L, Fan J, et al. Blood and bleeding risks in the Global Omega-3 Index Study. *PLoS ONE*. 2015;10(12):e0144444.
2. Harris WS, Gosselin B. Omega-3 fatty acids and bleeding risk: a review. *Am J Clin Nutr*. 2004;79(4):1044-1048.
3. Harris WS, Gosselin B. Omega-3 fatty acids and bleeding risk: a review. *Am J Clin Nutr*. 2004;79(4):1044-1048.
4. Harris WS, Gosselin B. Omega-3 fatty acids and bleeding risk: a review. *Am J Clin Nutr*. 2004;79(4):1044-1048.
5. Harris WS, Gosselin B. Omega-3 fatty acids and bleeding risk: a review. *Am J Clin Nutr*. 2004;79(4):1044-1048.
6. Harris WS, Gosselin B. Omega-3 fatty acids and bleeding risk: a review. *Am J Clin Nutr*. 2004;79(4):1044-1048.
7. Harris WS, Gosselin B. Omega-3 fatty acids and bleeding risk: a review. *Am J Clin Nutr*. 2004;79(4):1044-1048.
8. Harris WS, Gosselin B. Omega-3 fatty acids and bleeding risk: a review. *Am J Clin Nutr*. 2004;79(4):1044-1048.
9. Harris WS, Gosselin B. Omega-3 fatty acids and bleeding risk: a review. *Am J Clin Nutr*. 2004;79(4):1044-1048.



FatsofLife.com

Bu içerik yalnızca sağlık uzmanları içinidir. Kişiyi özel tıbbi öneri yerine geçmemektedir.

# Global Omega-3 Day™

- Every 03 March (03-03)
- Raise awareness of the benefits of EPA + DHA omega-3s
- Encourage people to increase intake



# Summary

- EPA and DHA Omega-3s are important for:
  - **Heart** health
  - **Brain** health
  - **Eye** health
  - **Prenatal** health/early development
- Evidence suggests EPA/DHA protect the brain from **cognitive decline** and augment existing treatment of **depression**
- Regular intake of at least **500 mg/day** EPA+DHA is recommended





# Thank you

Elana Natker, MS, RD  
Director, Consumer and Health  
Practitioner Communications  
GOED

[elana@goedomega3.com](mailto:elana@goedomega3.com)