

# Barry Sears, Ph.D.

Address: 200 Corporate Place, Peabody MA 01960  
Date of Birth: June 6, 1947  
Place of Birth: Long Beach, CA

## Research Interests:

Dietary modulation of hormonal and epigenetic responses, activation of AMPK, dietary reduction of cytokine levels, and reprogramming the immune system to remove and replace senescent cells.

## Education:

1964-1968 A.B. (with Honors) Occidental College, Los Angeles, CA  
1968-1971 Ph.D. Indiana University, Bloomington, IN

## Postdoctoral Training:

1971-1974 University of Virginia Medical School, Department of Biochemistry  
1974-1975 Boston University Medical School, Department of Medicine

## Academic and Non-Profit Positions:

1975-1978 Research Instructor, Department of Medicine, Boston University Medical School  
1978-1982 Staff Scientist, National Magnet Laboratory, Massachusetts Institute of Technology  
2003-present President, Inflammation Research Foundation, Peabody, MA  
2016-present Voluntary Assistant Professor of Surgery, University of Miami Medical School  
2016-present Adjunct Faculty, School of Nutrition and Health Promotion, College of Health Solutions, Arizona State University

## Industrial Positions:

1976-1986 President, Lipid Specialties, Inc.  
1982-1986 President, PGE Technologies, Inc.  
1986-1992 President, BIOSYN, Inc.  
1992-present President, Surfactant Technologies, Inc.  
1996-1999 President of Zone Perfect, Inc.  
1999-present President, Zone Labs, Inc.  
2020-present President, Senotec Foods, LLC

## Professional Memberships:

American Oil Chemists Society  
International Society for the Study of Fatty Acids and Lipids  
American Diabetes Association  
Obesity Society  
American Society of Bariatric Physicians

## Editorial Board Membership:

European Review of Medical and Pharmacological Science  
CellR<sup>4</sup>: Repair, Replacement, Regeneration, and Reprogramming  
Nutrients: Topics Board

# Publications

1. Griffiths RR, Sears B, and Jennings LB. "Specificity of transfer of a learned response by intracisternal injection of brain extract from trained rats: negative findings." *Psychological Reports* 25:339-348 (1969)
2. Baumrucker J, Calzadilla M, Centeno M, Lehrmann G, Linquist P, Dunham D, Price M, Sears B, and Cordes EH. "Secondary valence force catalysis. XI. Enhanced reactivity and affinity of cyanide ions elicited by ionic surfactants." *J Phys Chem* 74:1152-1156 (1970)
3. Baumrucker J, Calzadilla M, Centeno M, Lehrmann G, Urdaneta M, Linquist P, Dunham D, Price M, Sears B, and Cordes EH. "Secondary valence force catalysis. XII. Enhanced reactivity and affinity of cyanide toward N-substituted 3-carbomoyl-pyridinium ions elicited by ionic surfactants and biological lipids." *J Am Chem Soc* 94:8162-8172 (1972)
4. Williams E, Sears B, Allerhand A, and Cordes EH. "Segmental motion of amphipathic molecules in aqueous solutions and micelles. Applications of natural abundance  $^{13}\text{C}$  partially relaxed fourier transform nuclear magnetic resonance spectroscopy." *J Am Chem Soc* 95:4871-4874 (1973)
5. Sears B, Hutton WC, and Thompson TE. " $^{13}\text{C}$  NMR studies on bilayers formed from synthetic di-10-methyl-stearoyl phosphatidylcholine enriched with  $^{13}\text{C}$  in the N-methyl carbons." *Biochem Biophys Res Comm* 60:1141-147 (1974)
6. Sears B. " $^{13}\text{C}$  nuclear magnetic resonance studies of egg phosphatidylcholine." *J Mem Biol* 20:59-73 (1975)
7. Sears B, Hutton WC, and Thompson TE. "Effects of paramagnetic shift reagents on the  $^{13}\text{C}$  nuclear magnetic resonance spectra of egg phosphatidylcholine enriched with  $^{13}\text{C}$  in the N-methyl carbons." *Biochemistry* 15:1635-1639 (1976)
8. Yeagle PE, Hutton WC, Martin RB, Sears B, and Huang C. "Transmembrane asymmetry of vesicle lipids." *J Biol Chem* 251:2110-2114 (1976)
9. Sears B, Deckelbaum RJ, Janiak MJ, Shipley GG, and Small DM. "Temperature dependent  $^{13}\text{C}$  nuclear magnetic resonance studies of human serum low density lipoproteins." *Biochemistry* 15:4151-4157 (1976)
10. Curatolo WC, Shipley GG, Small DM, Sears B, and Neuringer LJ. "Effect of lectin-induced agglutination on  $^{13}\text{C}$  nuclear magnetic resonance line width in sonicated phospholipid/glycolipid vesicles." *J Amer Chem Soc* 99:6771-6772 (1977)
11. Roseman MA, Lentz B, Sears B, Gibbes D, and Thompson TE. "Properties of sonicated vesicles of three synthetic phospholipids." *Chem Phys Lipids* 21:205-210 (1978)
12. Curatolo WC, Yau AO, Small DM, and Sears B. "Lectin-induced agglutination of phospholipid/glycolipid vesicles." *Biochemistry* 17:5740-5744 (1978)
13. Neuringer LJ, Sears B, and Jungalwala FB. "Difference in orientational order in phospholipid and sphingomyelin bilayers." *FEBS Letters* 104:173-175 (1979)

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14. Neuringer LJ, Sears B, and Jungalwala FB. "2H NMR studies of the interaction of cerebroside with dipalmitoyl phosphatidylcholine in bilayers." *Biochim Biophys Acta* 558:325-329 (1979)
15. Widder KJ, Senyei AE, and Sears B. "Experimental methods in cancer therapeutics." *J Pharm Sci* 71:379-387 (1982)
16. Mendelsohn R, Dluhy RA, Curatolo WC, and Sears B. "Order and fluidity in terminal methyl regions of dipalmitoyl phosphatidylcholine multilayers: a comparison of Raman and deuterium NMR spectroscopy." *Chem Phys Lipids* 30:287-291 (1983)
17. Stark RE, Manstein JL, Curatolo WC, and Sears B. "Deuterium NMR of bile salt/phosphatidylcholine mixed micelles." *Biochemistry* 22:2486-2490 (1983)
18. Curatolo WC, Sears B, and Neuringer LJ. "A calorimetry and deuterium NMR study of mixed model membranes of 1-palmitoyl-2-oleyl phosphatidylcholine and saturated phosphatidylcholines." *Biochim Biophys Acta* 817:261-270 (1985)
19. Curatolo WC, Jungalwala FB, Sears B, Tuck L, and Neuringer LJ. "Deuterium NMR spectroscopy of biosynthetically deuterated mammalian tissues." *Biochemistry* 24:4360-4364 (1985)
20. Sears B. "Essential fatty acids and dietary endocrinology: a hypothesis for cardiovascular treatment." *J Adv Med* 6:211-224 (1993)
21. Sears B. "The Zone Diet and athletic performance." *Sports Med* 29:289-291 (2000)
22. Bell SJ and Sears B. "Low-glycemic load diets: Impact on obesity and chronic diseases." *Crit Rev Food Sci Nutr* 43:357-377 (2003)
23. Bell SJ and Sears B. "A proposal for a new national diet: A low glycemic-load diet with a unique macronutrient composition." *Metabol Syndr Related Disord* 1:199-208 (2003)
24. Bell SJ and Sears B. "The Zone diet: An anti-inflammatory, low glycemic-load diet." *Metabol Syndr and Related Disord* 2:24-38 (2004)
25. Johnston CS, Tjonn S, Swan PD, White A, Hutchins H, and Sears B. "Ketogenic low-carbohydrate diets have no metabolic advantage over nonketogenic low-carbohydrate diets." *Am J Clin Nutr* 83:1055-1061 (2006)
26. Johnston CS, Tjonn SL, Swan PD, White A, and Sears B. "Low-carbohydrate, high-protein diets that restrict potassium-rich fruits and vegetables promote calciuria." *Osteoporos Int* 17:1820-1821 (2006)
27. Johnston, CS, White AM, Tjonn, S, Swan PD, Hutchins H, and Sears B. "Ketogenic low-carbohydrate diets have no metabolic advantage over nonketogenic low-carbohydrate diets. Reply to NJ Krilanovich." *Am J Clin Nutr* 85:239 (2007)
28. Sorgi PJ, Hallowell EM, Hutchins HL, and Sears B. "Effects of an open-label pilot study with high-dose EPA/DHA concentrates on plasma phospholipids and behavior in children with attention deficit hyperactivity disorder." *Nutr J* 13:16 (2007)

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29. White AM, Johnston CS, Swan PD, Tjonn SL, and Sears B. "Blood ketones are directly related to fatigue and perceived effort during exercise in overweight adults adhering to low-carbohydrate diets for weight loss: A pilot study." *J Am Diet Assoc* 107: 1792-1796 (2007)
30. Sears B. "Anti-inflammatory diets for obesity and diabetes." *J Coll Amer Nutr* 28:482S-491S (2009)
31. Mills JD, Bailes JE, Sedney CL, Hutchins H, and Sears B. "Omega-3 dietary supplementation reduces traumatic axonal injury in a rodent head injury model". *J Neurosurgery* 114:77-84 (2011)
32. Sears B and Ricordi C. "Anti-inflammatory nutrition as a pharmacological approach to treat obesity." *J Obesity* 2011:431985 (2011)
33. Sears B and Ricordi C. "Role of fatty acids and polyphenols in inflammatory gene transcription and their impact on obesity, metabolic syndrome, and diabetes." *Eur Rev Med Pharmacol Sci* 16:1137-1154 (2012)
34. Lotrich, FE, Sears, B, and McNamara RK. "Elevated ratio of arachidonic acid to long-chain omega-3 fatty acids predicts depression development following interferon-alpha treatment: Relationship with interleukin-6." *Brain, Behavior, and Immunity* 31:48-53 (2013)
35. Sears B, Bailes J, and Asselin B. "Therapeutic uses of high-dose omega-3 fatty acids to treat comatose patients with severe brain injury." *PharmaNutrition* 1:86-89 (2013)
36. Lotrich FE, Sears B, and McNamara R.K. "Anger induced by interferon-alpha is moderated by ratio of arachidonic acid to omega-3 fatty acids." *J Psychosomatic Res* 75:475-483 (2013)
37. McNamara RK, Perry M, and Sears, B. "Dissociation of C-reactive protein levels from long-chain omega-3 fatty acid status and anti-depressant response in adolescents with major depressive disorder: an open-label dose-ranging trial." *J Nutr Therapeutics* 2:235-243 (2013)
38. Georgiou T, Neokleous A, Nikolaou D, and Sears B. "Pilot study for treating dry age-related macular degeneration (AMD) with high-dose omega-3 fatty acids." *PharmaNutrition* 2:8-11 (2014)
39. Sears B and Perry M. "The role of fatty acids in insulin resistance." *Lipids Health Disease* 14:121 (2015)
40. Sears B. "Anti-inflammatory diets." *J Am Coll Nutr* 34: Suppl 1 14-21 (2015)
41. Lotrich FE, Sears B, and McNamara RK. "Polyunsaturated fatty acids moderate the effect of poor sleep on depression risk." *Prostaglandins Leukot Essent Fatty Acids* 106:19-25 (2016)
42. Sears B. "High-dose omega-3 fatty acids and vitamin D for preservation of residual beta cell mass in type 1 diabetes." *CellR4* 4: e2107 (2016)

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43. Sears B. "Delaying adverse health consequences of aging: The role of omega-3 fatty acids on inflammation and resoleomics." *CellR4* 4: e2111 (2016)
44. Sears B. "Omega-3 fatty acids and cardiovascular disease: Do placebo doses give placebo results?" *CellR4* 5: e2302 (2017)
45. Sears B. "Polyphenols: Novel applications in human health." *CellR4* 5: e2437 (2017)
46. Johnson CS, Sears B, Perry M, and Knurick JR. "Use of novel high-protein functional food products as part of a calorie-restricted diet to reduce insulin resistance and increase lean body mass in adults: A randomized controlled trial." *Nutrients* 9:1182 (2017)
47. Davinelli S, Corbi G, Righetti S, Sears B, Olarte HH, Grassi D, and Scapagnini G. "Cardioprotection by cocoa polyphenols and omega-3 fatty acids: A disease-prevention perspective on aging-associated cardiovascular risk." *J Med Food* 21:1-10 (2018)
48. Sears B. "Omega-3 fatty acids and cardiovascular disease: Dose and AA/EPA ratio determine the therapeutic outcome." *CellR4* 6: e2531 (2018)
49. Infante M, Sears B, Rizzo AM, Mariani Cerati D, Caprio M, Ricordi C, and Fabbri A. "Omega-3 PUFAs and vitamin D co-supplementation as a safe-effective therapeutic approach for core symptoms of autism spectrum disorder: case report and literature review." *Nutr Neurosci* 13:1-12 (2018)
50. Sears B. "Appropriate doses of omega-3 fatty acids for therapeutic results." *CellR4* 6: e2578 (2018)
51. Infante, M, Ricordi C, Baidal DA, Alejandro R, Lonzone G, Sears B, Caprio M, and Fabbri A. "VITAL study: An incomplete picture?" *Eur Rev Med Pharm Sci* 23: 3142-3147 (2019)
52. NaPier Z, Kanim LEA, Arabi Y, Salehi K, Sears B, Perry M, Kim S, Sheyn D, Bae HW, and Glaeser JD. "Omega-3 fatty acid supplementation reduces intervertebral disc degeneration." *Med Sci Monit* 14: 9531-9537 (2019)
53. Bailes JE, Abusuwwa R, Chowdhry R, Schleicher D, Hempeck N, McErlane M, Gandhi YN, Bokhari F, Navarro N, Patel V, and Sears B. "Role of omega-3 fatty acids in outcomes of severe brain trauma: A case series." *J Neurosurg* 15:1-5 (2020)
54. Sears B, Perry M, and Saha AK. "Dietary technologies to optimize healing from injury-induced inflammation." *Antiinflamm Antiallergy Agents Med Chem* 20: 123-131 (2021)
55. Sears B and Saha AK. "Dietary control of inflammation and resolution." *Frontiers Nutr* 8:709435 (2021)

# Books

1. Sears B. *The Zone*. Regan Books. New York, NY (1995)
2. Sears B. *Mastering the Zone*. Regan Books. New York, NY (1997)
3. Sears B. *Zone Perfect Meals in Minutes*. Regan Books. New York, NY (1997)
4. Sears B. *Zone Food Blocks*. Regan Books. New York, NY (1998)
5. Sears B. *The Anti-Aging Zone*. Regan Books. New York, NY (1999)
6. Sears B. *A Week in the Zone*. Regan Books. New York, NY (2000)
7. Sears B. *The Soy Zone*. Regan Books. New York, NY (2000)
8. Sears B. *100 Great Zone Foods*. Regan Books. New York, NY (2001)
9. Sears B. *The OmegaRx Zone*. Regan Books. New York, NY (2002)
10. Sears B. *What to Eat in the Zone*. Regan Books. New York, NY (2003)
11. Sears B and Sears L. *Zone Meals in Seconds*. Regan Books. New York, NY (2004)
12. Sears B. *The Anti-Inflammation Zone*. Regan Books. New York, NY (2005)
13. Morandi D. and Sears B. *Il Bello Della Zona*. Sperling and Kupfer. Milan, IT (2007)
14. Sears B. *Toxic Fat*. Thomas Nelson. Nashville, TN (2008)
15. Sears B. and Morandi D. *La Zona del Futuro*. Sperling and Kupfer. Milan, IT (2013)
16. Sears B. *The Mediterranean Zone*. Ballantine Books. New York, NY (2014)
17. Ferrazzi E. and Sears B. eds. *Metabolic Syndrome and Complications of Pregnancy*. Springer. Heidelberg, Germany (2015)
18. Sears B. *Positive Nutrition*. Sperling and Kupfer. Milan, IT (2017)
19. Sears, B. *The Resolution Zone*. Zone Press. Palm City, FL (2019)

# U.S. Patents

1. Sears, B. "Phosphatidyl quarternary ammonium compounds." U.S. Patent No. 4,086,257 (1978)
2. Sears, B. "Phosphatidyl sulfonium compounds." U.S. Patent No. 4,097,502 (1978)
3. Sears, B. "Phosphatidyl phosphonium compounds." U.S. Patent No. 4,097,503 (1978)
4. Sears, B. "Method for determining the level of LDL cholesterol in blood plasma." U.S. Patent No. 4,126,416 (1978)
5. Sears, B. "Method of preparing a controlled release pharmaceutical preparation." U.S. Patent No. 4,145,410 (1979)
6. Sears, B. "Kit for determining the level of LDL cholesterol in body fluids." U.S. Patent No. 4,190,628 (1980)
7. Sears, B. and Yesair, D.W. "Xenobiotic delivery vehicles." U.S. Patent No. 4,298,594 (1981)
8. Sears, B. "Method of emulsifying cholesterol, cholesterol esters, and triglyceride compounds." U.S. Patent No. 4,320,121 (1982)
9. Sears, B. "Synthetic phospholipid compounds." U.S. Patent No. 4,426,330 (1984)
10. Sears, B. "Magnetic compositions and magnetic memory devices prepared." U.S. Patent No. 4,507,217 (1985)
11. Sears, B. "Synthetic phospholipid compounds." U.S. Patent No. 4,534,899 (1985)
12. Sears, B. "Method for reducing blood pressure levels in hypertensive persons." U.S. Patent No. 5,059,622 (1991)
13. Sears, B. "Method of and nutritional and pharmaceutical compositions for reduction of hyperinsulinemia." U.S. Patent No. 6,140,304 (2000)
14. Sears, B. "Novel inhibitors of arachidonic acid formation." U.S. Patent No. 8,987,325 (2015)