

Edward Lewis Tobinick, MD

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Curriculum Vitae September 2010

Founder and Director, Institute for Neurological Research
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Education

- 1969-73 B.A. Magna Cum Laude, with honors in Biology, Brandeis University, Waltham, Massachusetts
1973-1977 MD, UCSD School of Medicine
1977 Subinternship in Neurology, Memorial Sloan Kettering - New York Hospital Neurology Program (one month rotation)
1977-1978 Internship in Internal Medicine, UCLA
1978 Diplomate, National Bd. Med. Examiners; California Medical License G37710
1978-82 UCLA Internal Medicine & Dermatology Residencies
1980 Diplomate, American Board of Internal Medicine
1982 Diplomate, American Board of Dermatology

Publications - [Neurology](#)

- Perispinal etanercept: a new therapeutic paradigm in neurology.*** Edward Tobinick. Expert Review of Neurotherapeutics. 2010 June; 10(6):985-1002. PMID:20518613.
- Tumor necrosis factor modulation for treatment of Alzheimer's disease: rationale and current evidence.*** Edward Tobinick. CNS Drugs. 2009 Sept; 23(9):713-25. PMID:19689163.
- Perispinal etanercept for neuroinflammatory disorders.*** Edward Tobinick. Drug Discovery Today, 2009 Feb, 14(3-4): 168-77.
- Rapid intracerebroventricular delivery of 64-Cu-DOTA-etanercept after peripheral administration demonstrated by PET imaging.*** Edward Tobinick, K. Chen, X. Chen. BMC Research Notes, 2009 Feb 27, 2:28.
- Rapid improvement in verbal fluency and aphasia following perispinal etanercept in Alzheimer's disease.*** Edward Tobinick, Hyman Gross, BMC Neurology, 2008, 8(1): 27.
- Perispinal etanercept produces rapid improvement in primary progressive aphasia: Identification of a novel, rapidly reversible TNF-mediated pathophysiologic mechanism.*** Edward Tobinick. Medscape J Med, 2008 10(6): 135.
- A critique of intradiscal administration for treatment of radiculopathy.*** Edward Tobinick. Anesthesiology, 2008 108(2): 334; author reply 335.

Publications - [Neurology \(cont.\)](#)

- Rapid cognitive improvement in Alzheimer's disease following perispinal etanercept administration.*** Edward Tobinick, Hyman Gross. J Neuroinflammation. 2008 Jan 9;5:2.
- New horizons in the treatment of Alzheimer's disease: Immunotherapeutics.*** Edward Tobinick, U.S. Neurology, 2008; 4(1): 34-36.
- Perispinal etanercept for treatment of Alzheimer's disease.*** Edward Tobinick, Current Alzheimer Research, 2007 4(5): 550-2.
- Resolution of chronic pain and fingertip ulceration due to hand-arm vibration syndrome following combination pharmacotherapy.*** Buell, C., E. Tobinick, K. Lamp, H. Arch Derm, 2007 143 (10): p. 1343-4.
- Paradigm Shift: Excess TNF-alpha emerges as a key therapeutic target in Alzheimer's disease.*** Edward Tobinick, Medscape General Medicine, 2007 9(3): 17.
- TNF Modulation for Treatment of Alzheimer's Disease: A Six Month Pilot Study.*** Edward Tobinick MD, H. Gross MD, A. Weinberger MD, H. Cohen MD FRCP, Medscape General Medicine, 2006 April; 8(2): 25.
- Spinal delivery of p38 and TNF-alpha inhibitors.*** Edward Tobinick, MD, PLoS Medicine, 2006; 3(11): e511.
- Efficacy of etanercept delivered by perispinal administration for chronic back and/or neck disc-related pain: a study of clinical observations in 143 patients.*** Edward Tobinick, MD, et. al. Current Medical Research and Opinion, 2004 20(7): 1075-85.
- Targeted etanercept for discogenic neck pain: uncontrolled, open-label results in two adults.*** Edward Tobinick, Clinical Therapeutics, 2003 Apr 1; 25: 1211-1218.
- Perispinal TNF-alpha inhibition for discogenic pain.*** Edward Tobinick et. al, Swiss Med W. 2003 Mar;133(11-12):170-7.

Abstracts & Presentations - [Neurology](#)

Perispinal TNF-alpha inhibition for discogenic pain. Invited presentation by Edward Tobinick MD at the 2nd Annual Restauracion Neurologica 2004 International Conference, Havana, Cuba, February 27, 2004.

TNF Modulation for Treatment of Alzheimer's Disease: A Six Month Pilot Study. Edward Tobinick MD, H. Gross MD, A. Weinberger MD, H. Cohen MD FRCPC. Accepted abstract for the 10th International Conference on Alzheimer's Disease and Related Disorders, Madrid, Spain, July 19, 2006.

TNF Modulation for Treatment of Alzheimer's Disease: Effects on Verbal Function. Edward Tobinick MD, David Shirinyan, H. Gross. Presentation at the Days of Molecular Medicine Conference, Karolinska Institutet, Stockholm, Sweden, May 27, 2006.

Perispinal etanercept for treatment of Alzheimer's Disease. Edward Tobinick MD. Invited presentation at the 7th International Conference on Alzheimer's Disease Drug Discovery, NYC, October 12, 2006, published in *Alzheimer's and Dementia: the Journal of the Alzheimer's Association*, 2 (3), p. S721-782, July 2006.

Perispinal etanercept for treatment of Alzheimer's Disease. Edward Tobinick MD. Invited presentation at the Best Practices in the Continuum of Care: Advances in Alzheimer's Disease Management conference for University of Arkansas for Medical Sciences, Little Rock, Arkansas, April 16, 2008.

Perispinal etanercept produces rapid improvement in primary progressive aphasia. Abstract presented at the 11th International Conference on Alzheimer's Disease and Related Disorders, Chicago, Illinois, July 30, 2008, published in *Alzheimer's and Dementia: the Journal of the Alzheimer's Association*, 4 (4) T1-880, July 2008.

Repurposing of Enbrel for Alzheimer's Disease. Keynote presentation by Edward Tobinick MD Third Annual Drug Repositioning Summit, Boston, Massachusetts, October 6-7, 2008.

Perispinal etanercept for Alzheimer's Disease. Invited presentation by Edward Tobinick MD at Restauracion Neurologica 2009 International Conference, Havana, Cuba, March 11, 2009.

TNF modulation for treatment of Alzheimer's disease. Presentation by Edward Tobinick MD at the inaugural Targeting Alzheimer's with Novel Therapeutics Conference at the World Pharmaceutical Congress, June 11, 2009, Philadelphia, Pennsylvania.

TNF antagonists for neurological disorders: from concept to the clinic. Presentation by Edward Tobinick MD at GTC bio's 5th Modern Drug Discovery & Development Conference, October 14-16, 2009, San Diego, California.

Publications - [Anatomy/Physiology](#)

The Cerebrospinal Venous System: Anatomy, Physiology, and Clinical Implications. Edward Tobinick, *Medscape General Medicine*, 2006 February; 8(1): 53.

Publications - [Cardiology](#)

Right Ventricular Ejection Fraction in Patients with Acute Anterior and Inferior Myocardial Infarction Assessed by Radionuclide Angiography, Tobinick E, Schelbert H, Henning H, et. al. *Circulation* 57: 1078-1084, June 1978.

Publications - [Dermatology](#)

Basal Cell Carcinoma. Edward Tobinick M.D., *American Family Physician*, 36:(3)219-224, September, 1987.

Publications - [Immunology/Virology](#)

TNF-alpha inhibition for potential therapeutic modulation of SARS coronavirus infection. Tobinick E, *Curr Med Res Opin*, 20(1) 39-40, Jan. 2004.

Publications - [Oncology/Neurology](#)

Targeted Etanercept for Treatment-Refractory Pain Due to Bone Metastasis: Two Case Reports. Edward Tobinick, MD, *Clinical Therapeutics*, 2003 August; 25: 2279-2288.

Publications - [Pharmacology](#)

The value of drug repositioning in the current pharmaceutical market. Edward Tobinick, *Drug News and Perspectives*, 2009 Mar; 22(2): 119-125.

Publications - [Textbook](#)

Skin Surgery, A Practical Guide Usatine R, Tobinick E, Moy R, Siegel D. Mosby 1998, 337 pp.

U.S. patents issued- Neurology

6,015,557 **Tumor necrosis factor antagonists for the treatment of neurological disorders.**

Issued January 18, 2000; filed March 23, 1999.

6,177,077 B1 **TNF inhibitors for the treatment of neurological disorders.** Issued January 23, 2001; filed December 31, 1999.

6,379,666 B1 **TNF inhibitors for the treatment of neurological, retinal, and muscular disorders** Issued April 30, 2002; filed December 11 2000.

6,419,934 B1 **TNF modulators for treating neurological disorders associated with viral infection.** Issued July 16, 2002; filed September 5, 2000.

6,423,321 B2 **Cytokine antagonists for the treatment of sensorineural hearing loss.** Issued July 23, 2002; filed December 27, 2000.

6,471,961 **Interleukin antagonists for the treatment of neurological, retinal and muscular disorders.** Issued October 29, 2002; filed May 2, 2000.

6,537,549 **Cytokine antagonists for the treatment of localized disorders.** Issued March 25, 2003, filed April 25, 2001.

6,623,736 **Interleukin antagonists for the treatment of neurological, retinal and muscular disorders.** Issued September 23, 2003.

6,982,089 **Cytokine antagonists for neurological and neuropsychiatric disorders.** Issued January 3, 2006.

7,214,658 **Method of delivering a TNF antagonist to the brain of a human by perispinal administration without direct intrathecal injection.** Issued May 8, 2007.

7,629,311: **Methods to facilitate transmission of large molecules across the blood-brain, blood-eye, and blood-nerve barriers.** Issued Dec 8, 2009.

Note: All issued U.S. patents are assigned to TACT IP, LLC.

Honors

National Honor Society, 1969

Phi Beta Kappa, Brandeis University, 1973

UCLA Department of Medicine Five Year Teaching Certificate, 1987

UCLA Department of Medicine Ten Year Teaching Certificate, 1992

Venice Family Clinic Certificate of Appreciation for Volunteer Teaching, 1992

Venice Family Clinic, Rossman/Davidson Clinical Teaching/Service Award, 2005

Academic and Journal Appointments

1984-present (2010) Assistant Clinical Professor of Medicine, UCLA School of Medicine

2008-2010 Editorial Board, *Journal of Neuroinflammation*

2009: Invited to join the Editorial Board of the *Journal of Neurology and Neuroscience*

2009-2010: Invited expert reviewer for the following journals: *Brain Research, Current Alzheimer Research, Experimental Neurology, Journal of Neurochemistry, Journal of Neuroimmunology, Neuroscience and Pharmaceutical Medicine*

Specialty Board Certifications

1980-present (2010) Certified, American Board of Internal Medicine

1982-present (2010) Certified, American Board of Dermatology

Professional Societies

1984 - 2008: Fellow of the American Academy of Dermatology.

1998 - 2010: Member, American Society for Laser Medicine and Surgery.

Foreign patents

758,523 (Australia) **TNF antagonists for the treatment of neurological disorders.** Issued July 2003.

Multiple additional foreign patents pending.

U.S. patent issued- Ophthalmology

6,428,787 B1 **TNF inhibitors for the treatment of retinal disorders.** Issued August 6, 2002; filed September 19, 2000.

U.S. patents issued- Laser

6,080,147 **Method of employing a flashlamp for removal of hair, veins and capillaries.**

6,149,645 **Apparatus and method employing lasers for removal of hair.**

6,165,171 **Apparatus and method employing lasers for removal of hair.**

6,168,589 **Apparatus and method employing a single laser for removal of hair.**

6,217,572 **Apparatus and method employing lasers for removal of hair.**

6,579,283 **Apparatus and method employing a single laser for removal of hair, veins, and capillaries.** Issued June 17, 2003.

6,595,985 **Apparatus and method employing parametrically defined pulse groups for laser hair removal.** Issued July 22, 2003.

More than 200 peer-reviewed scientific articles in the medical literature have cited Dr. Tobinick's publications. The following are a selection of recent articles which contain scientific citations to one of Dr. Tobinick's published articles:

- Anderson, G.M., M.T. Nakada, and M. DeWitte, *Tumor necrosis factor-alpha in the pathogenesis and treatment of cancer*. *Curr Opin Pharmacol*, 2004. **4**(4): p. 314-20.
- Aoki, Y., et al., *Distribution and immunocytochemical characterization of dorsal root ganglion neurons innervating the lumbar intervertebral disc in rats: a review*. *Life Sci*, 2004. **74**(21): p. 2627-42.
- Aoki, Y., et al., *Neuropathology of Discogenic Low Back Pain: A Review*. *The Internet Journal of Spine Surgery*, 2005. **2**(1).
- Bhargava, A., et al., *Injection Therapy for Lumbar Radiculopathy*. *Current Opinion in Orthopedics*, 2005. **16**: p. 152-157.
- Bianco, E., et al. *Linea guida: Appropriatezza della diagnosi e del trattamento chirurgico dell'ernia del disco lombare sintomatica*. in *Linea guida: Italy*. 2005. Italy: PNLG.
- Cohen, S.P., et al., *Lumbar discography: a comprehensive review of outcome studies, diagnostic accuracy, and principles*. *Reg Anesth Pain Med*, 2005. **30**(2): p. 163-83.
- Cole, P. and X. Rabasseda, *The soluble tumor necrosis factor receptor etanercept: a new strategy for the treatment of autoimmune rheumatic disease*. *Drugs Today (Barc)*, 2004. **40**(4): p. 281-324.
- Furst, D.E., et al., *Updated consensus statement on biological agents for the treatment of rheumatic diseases, 2006*. *Ann Rheum Dis*, 2006. **65 Suppl 3**: p. iii2-iii15.
- Hildebrandt, A., et al., *European guidelines for the management of chronic non-specific low back pain (Spanish version) (de la version espanola)*. On behalf of the COST B13 Working Group on Guidelines for Chronic Low Back Pain, 2005.
- Griffin, W.S., *Perispinal etanercept: Potential as an Alzheimer therapeutic*. *Journal of Neuroinflammation*, 2008. **5**(1):3.
- Karppinen, J., et al., *Tumor necrosis factor-alpha monoclonal antibody, infliximab, used to manage severe sciatica*. *Spine*, 2003. **28**(8): p. 750-3; discussion 753-4.
- Kato, K., S. Kikuchi, V.I. Shubayev, and R.R. Myers, J., *Distribution and tumor necrosis factor-alpha isoform binding specificity of locally administered etanercept into injured and uninjured rat sciatic nerve*. *Neuroscience*, 2009. **160**(2): p. 492-500.
- Korhonen, T., et al., *Efficacy of infliximab for disc herniation-induced sciatica: one-year follow-up*. *Spine*, 2004. **29**(19): p. 2115-9.
- Lai, S.T., *Treatment of severe acute respiratory syndrome*. *Eur J Clin Microbiol Infect Dis*, 2005. **24**(9): p. 583-91.
- Mulleman, D., et al., *Pathophysiology of disk-related low back pain and sciatica. II. Evidence supporting treatment with TNF-alpha antagonists*. *Joint Bone Spine*, 2006. **73**(3): p. 270-7.
- Myers, R.R., W.M. Campana, and V.I. Shubayev, *The role of neuroinflammation in neuropathic pain: mechanisms and therapeutic targets*. *Drug Discov Today*, 2006. **11**(1-2): p. 8-20.
- Olesen, J. and T.S. Jensen, *From basic pain mechanisms to headache*. *Frontiers in headache research*; v. 14. 2006, New York: Oxford University Press Inc.
- Oliveri, C. and R. Polosa, *Etanercept in chronic severe asthma*. *Thorax*, 2006. **61**(7): p. 640; author reply 640.
- Pasternack, F.R., L.P. Fox, and D.E. Engler, *Silicone granulomas treated with etanercept*. *Arch Dermatol*, 2005. **141**(1): p. 13-5.
- Pearce, J.M., *The craniospinal venous system*. *Eur Neurol*, 2006. **56**(2): p. 136-8.
- Quintao, N.L., et al., *Long-lasting neuropathic pain induced by brachial plexus injury in mice: Role triggered by the pro-inflammatory cytokine, tumour necrosis factor alpha*. *Neuropharmacology*, 2006. **50**(5): p. 614-20.
- Rosenberg, P., *Cytokine Inhibition for Treatment of Alzheimer's Disease*. *Medscape General Medicine: Neurology*, 2006. **8**(2).
- Scallon, B.J., et al., *A review of antibody therapeutics and antibody-related technologies for oncology*. *J Immunother*, 2006. **29**(4): p. 351-64.
- Scheinfeld, N., *The medical uses and side effects of etanercept with a focus on cutaneous disease*. *J Drugs Dermatol*, 2004. **3**(6): p. 653-9.
- Sommer, C. and M. Schafers, *Mechanisms of neuropathic pain: the role of cytokines*. *Drug Discovery Today: Disease Mechanisms*, 2004. **1**(4): p. 441-448.
- Tang, J. and R. Chan, *Severe acute respiratory syndrome(SARS) in intensive care units(ICUs): limiting the risk to healthcare workers*. *Current Anaesthesia & Critical Care*, 2004. **15**(3): p. 143-155.
- Wacnik, P.W., et al., *Nociceptive characteristics of tumor necrosis factor-alpha in naive and tumor-bearing mice*. *Neuroscience*, 2005. **132**(2): p. 479-91.
- Yaksh, L. and L. Sorkin, *Mechanisms of Neuropathic Pain*. *Current Medicinal Chemistry-Central Nervous System Agents*, 2005. **5**(2): p. 129-140.
- Yan, L., et al., *Therapeutic potential of cytokine and chemokine antagonists in cancer therapy*. *Eur J Cancer*, 2006. **42**(6): p.793-802.

The following articles published in 2010 have cited as a scientific reference one of the peer-reviewed Alzheimer publications of Edward Tobinick MD:

1. Aderinwale OG, Ernst HW, Mousa SA. Current therapies and new strategies for the management of Alzheimer's disease. *Am J Alzheimers Dis Other Demen*, 25(5), 414-424 (2010).
2. Bassi E, De Filippi C. Beneficial neurological effects observed in a patient with psoriasis treated with etanercept. *Am J Clin Dermatol*, 11 Suppl 1, 44-45 (2010).
3. Beattie MS, Ferguson AR, Bresnahan JC. AMPA-receptor trafficking and injury-induced cell death. *Eur J Neurosci*, (2010).
4. Candore G, Bulati M, Caruso C *et al*. Inflammation, cytokines, immune response, apolipoprotein E, cholesterol, and oxidative stress in Alzheimer disease: therapeutic implications. *Rejuvenation Res*, 13(2-3), 301-313 (2010).
5. Chakrabarty P. Current and future therapies for Alzheimer's disease. In: *Protein misfolding diseases: Current and emerging principles and therapies*. (2010) 711-774.
6. Chavant F, Deguil J, Pain S *et al*. Imipramine, in part through tumor necrosis factor alpha inhibition, prevents cognitive decline and beta-amyloid accumulation in a mouse model of Alzheimer's disease. *J Pharmacol Exp Ther*, 332(2), 505-514 (2010).
7. Chen YM, Chen HH, Lan JL, Chen DY. Improvement of cognition, a potential benefit of anti-TNF therapy in elderly patients with rheumatoid arthritis. *Joint Bone Spine*, 77(4), 366-367 (2010).
8. Chez MG, Guido-Estrada N. Immune therapy in autism: historical experience and future directions with immunomodulatory therapy. *Neurotherapeutics*, 7(3), 293-301 (2010).
9. Chio CC, Lin JW, Chang MW, Wang CC, Yang CZ, Chang CP. Therapeutic evaluation of etanercept in a model of traumatic brain injury. *J Neurochem*, (2010), in press.
10. Clark IA, Alleva LM, Vissel B. The roles of TNF in brain dysfunction and disease. *Pharmacol Ther*, (2010), in press.
11. Colton CA, Wilcock DM. Assessing activation states in microglia. *CNS Neurol Disord Drug Targets*, 9(2), 174-191 (2010).
12. Duro D, Simoes MR, Ponciano E, Santana I. Validation studies of the Portuguese experimental version of the Montreal Cognitive Assessment (MoCA): confirmatory factor analysis. *J Neurol*, 257(5), 728-734 (2010).
13. Elfferich MD, Nelemans PJ, Ponds RW, De Vries J, Wijnen PA, Drent M. Everyday cognitive failure in sarcoidosis: the prevalence and the effect of anti-TNF-alpha treatment. *Respiration*, 80(3), 212-219 (2010).
14. Grabowska I, Radecka H, Burza A, Radecki J, Kaliszan M, Kaliszan R. Association constants of pyridine and piperidine alkaloids to amyloid beta peptide determined by electrochemical impedance spectroscopy. *Curr Alzheimer Res*, 7(2), 165-172 (2010).
15. He MX, Yang WL, Zhang MM *et al*. Association between interleukin-6 gene promoter -572C/G polymorphism and the risk of sporadic Alzheimer's disease. *Neurol Sci*, 31(2), 165-168 (2010).
16. Krikorian R, Nash TA, Shidler MD, Shukitt-Hale B, Joseph JA. Concord grape juice supplementation improves memory function in older adults with mild cognitive impairment. *Br J Nutr*, 103(5), 730-734 (2010).
17. Landoni VI, de Campos-Nebel M, Schierloh P *et al*. Shiga toxin 1-induced inflammatory response in lipopolysaccharide-sensitized astrocytes is mediated by endogenous tumor necrosis factor alpha. *Infect Immun*, 78(3), 1193-1201 (2010).
18. Lanni C, Stanga S, Racchi M, Govoni S. The expanding universe of neurotrophic factors: therapeutic potential in aging and age-associated disorders. *Curr Pharm Des*, 16(6), 698-717 (2010).
19. McGeer EG, McGeer PL. Neuroinflammation in Alzheimer's disease and mild cognitive impairment: a field in its infancy. *J Alzheimers Dis*, 19(1), 355-361 (2010).
20. McNaull BB, Todd S, McGuinness B, Passmore AP. Inflammation and anti-inflammatory strategies for Alzheimer's disease—a mini-review. *Gerontology*, 56(1), 3-14 (2010).
21. Montinaro V, Iaffaldano GP, Granata S *et al*. Emotional symptoms, quality of life and cytokine profile in hemodialysis patients. *Clin Nephrol*, 73(1), 36-43 (2010).
22. Munoz L, Ammit AJ. Targeting p38 MAPK pathway for the treatment of Alzheimer's disease. *Neuropharmacology*, 58(3), 561-568 (2010).
23. Nicolae C, Olsen BR. Unexpected matrix diseases and novel therapeutic strategies. *Cell Tissue Res*, 339(1), 155-165 (2010).
24. Park KM, Bowers WJ. Tumor necrosis factor-alpha mediated signaling in neuronal homeostasis and dysfunction. *Cell Signal*, 22(7), 977-983 (2010).
25. Pavlovic DM, Pavlovic AM, Totic S. [Pharmacotherapy of dementia]. *Vojnosanit Pregl*, 67(5), 419-426 (2010).
26. Ramanan S, Zhao W, Riddle DR, Robbins ME. Role of PPARs in Radiation-Induced Brain Injury. *PPAR Res*, 2010, 234975 (2010).
27. Vinukonda G, Csiszar A, Hu F *et al*. Neuroprotection in a rabbit model of intraventricular haemorrhage by cyclooxygenase-2, prostanoid receptor-1 or tumour necrosis factor-alpha inhibition. *Brain*, 133(Pt 8), 2264-2280 (2010).

The following articles have cited and/or discussed the published articles of Dr. Tobinick and his colleagues regarding perispinal etanercept for Alzheimer's disease prior to 2010:

1. Perispinal administration of anti-TNF agent results in rapid cognitive improvement in AD. *Nature Clinical Practice Neurology*, 2008. 5: p. 2.
2. Abdipranoto, A., et al., *The role of neurogenesis in neurodegenerative diseases and its implications for therapeutic development*. *CNS Neurol Disord Drug Targets*, 2008. 7(2): p. 187-210.
3. Andrade, C. and R. Radhakrishnan, *The prevention and treatment of cognitive decline and dementia: An overview of recent research on experimental treatments*. *Indian Journal of Psychiatry*, 2009. 51(1): p. 12.
4. Auffray, C., *Faculty of 1000 Biology: evaluations for Tobinick EL & Gross H J of Neuroinflammation 2008 Jan 9 5 (1): 2* <http://www.f1000biology.com/article/id/1097874/evaluation>. *Faculty of 1000 Biology*, 2008.
5. Balistreri, C.R., et al., *Association between the polymorphisms of TLR4 and CD14 genes and Alzheimer's disease*. *Curr Pharm Des*, 2008. 14(26): p. 2672-7.
6. Baune, B.T., et al., *Cognitive dysfunction in mice deficient for TNF- and its receptors*. *Am J Med Genet B Neuropsychiatr Genet*, 2008. 147B(7): p. 1056-64.
7. Berbaum, K., et al., *Induction of novel cytokines and chemokines by advanced glycation endproducts determined with a cytometric bead array*. *Cytokine*, 2008. 41(3): p. 198-203.
8. Bona, D.D., et al., *Systematic review by meta-analyses on the possible role of TNF-Alpha polymorphisms in association with Alzheimer's disease*. *Brain Res Rev*, 2009.
9. Brietzke, E. and F. Kapczinski, *TNF-alpha as a molecular target in bipolar disorder*. *Prog Neuropsychopharmacol Biol Psychiatry*, 2008. 32(6): p. 1355-61.
10. Buchhave, P., et al., *Soluble TNF receptors are associated with Abeta metabolism and conversion to dementia in subjects with mild cognitive impairment*. *Neurobiol Aging*, 2008.
11. Chiarini, A., et al., *Calcium-Sensing Receptor (CaSR) in Human Brains Pathophysiology: Roles in Late-Onset Alzheimers Disease (LOAD)*. *Current Pharmaceutical Biotechnology*, 2009. 10(3): p. 317-326.
12. Clark, I., *Along a TNF-paved road from dead parasites in red cells to cerebral malaria, and beyond*. *Parasitology*, 2009: p. 1-12.
13. Cohen, S.P., et al., *Randomized, double-blind, placebo-controlled, dose-response, and preclinical safety study of transforaminal epidural etanercept for the treatment of sciatica*. *Anesthesiology*, 2009. 110(5): p. 1116-26.
14. Constantin, C.E., et al., *Endogenous tumor necrosis factor alpha (TNFalpha) requires TNF receptor type 2 to generate heat hyperalgesia in a mouse cancer model*. *J Neurosci*, 2008. 28(19): p. 5072-81.
15. Fietta, P., *The immunosenescence*. *Riv Biol*, 2008. 101(2): p. 247-63.
16. Freund-Levi, Y., et al., *Effects of Omega-3 Fatty Acids on Inflammatory Markers in Cerebrospinal Fluid and Plasma in Alzheimer's Disease: The OmegaAD Study*. *Dement Geriatr Cogn Disord*, 2009. 27: p. 481-490.
17. Goldberg, R., *International conference on Alzheimer's disease 2008: Summary of new research: perispinal etanercept improves primary progressive aphasia*. *Brown University Geriatric Psychopharmacology Update*, 2008. 12(10): p. 4.
18. Griffin, W.S., *Perispinal etanercept: potential as an Alzheimer therapeutic*. *J Neuroinflammation*, 2008. 5: p. 3.
19. Hu, W., et al., *Development of a novel therapeutic suppressor of brain proinflammatory cytokine up-regulation that attenuates synaptic dysfunction and behavioral deficits*. *Bioorganic & medicinal chemistry letters*, 2007. 17(2): p. 414-418.
20. Husain, M.M., et al., *Present and prospective clinical therapeutic regimens for Alzheimer's disease*. *Neuropsychiatr Dis Treat*, 2008. 4(4): p. 765-77.
21. Janelsins, M., *Inflammation in Alzheimer's Disease: Implicating Tumor Necrosis Factor-alpha as a Key Mediator of Disease Pathogenesis*. 2008, University of Rochester.
22. Janelsins, M.C., et al., *Chronic neuron-specific tumor necrosis factor-alpha expression enhances the local inflammatory environment ultimately leading to neuronal death in 3xTg-AD mice*. *Am J Pathol*, 2008. 173(6): p. 1768-82.
23. Jirillo, E., et al., *A scientific approach to anti-ageing therapies: state of the art*. *Curr Pharm Des*, 2008. 14(26): p. 2637-42.
24. Kato, K., et al., *Distribution and tumor necrosis factor-alpha isoform binding specificity of locally administered etanercept into injured and uninjured rat sciatic nerve*. *Neuroscience*, 2009. 160(2): p. 492-500.

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The following articles have cited and/or discussed the published articles of Dr. Tobinick and his colleagues regarding perispinal etanercept for Alzheimer's disease (continued):

25. Kauer-Sant'Anna, M., et al., *Brain-derived neurotrophic factor and inflammatory markers in patients with early-vs. late-stage bipolar disorder*. The International Journal of Neuropsychopharmacology, 2008: p. 1-12.
26. Maczurek, A., K. Shanmugam, and G. Munch, *Inflammation and the redox-sensitive AGE-RAGE pathway as a therapeutic target in Alzheimer's disease*. Ann N Y Acad Sci, 2008. 1126: p. 147-51.
27. Marchalant, Y., H.M. Brothers, and G.L. Wenk, *Inflammation and aging: can endocannabinoids help?* Biomed Pharmacother, 2008. 62(4): p. 212-7.
28. Marousi, S., J. Ellul, and M. Karakantza, *Genetic Polymorphisms of Type-1 and Type-2 Inflammatory Cytokines in Ischaemic Stroke*. Vascular Disease Prevention, 2008. 5(1): p. 89-103.
29. McAfoose, J. and B.T. Baune, *Evidence for a cytokine model of cognitive function*. Neurosci Biobehav Rev, 2009. 33(3): p. 355-66.
30. McAlpine, F., *Neuroinflammation and tumor necrosis factor signaling in the pathophysiology of Alzheimer's*. Journal of Inflammation Research, 2008. 1: p. 29-39.
31. McAlpine, F.E., et al., *Inhibition of soluble TNF signaling in a mouse model of Alzheimer's disease prevents pre-plaque amyloid-associated neuropathology*. Neurobiol Dis, 2009. 34(1): p. 163-77.
32. McCoy, M.K. and M.G. Tansey, *TNF signaling inhibition in the CNS: implications for normal brain function and neurodegenerative disease*. J Neuroinflammation, 2008. 5: p. 45.
33. Munoz, L., et al., *A novel p38 MAPK inhibitor suppresses brain proinflammatory cytokine up-regulation and attenuates synaptic dysfunction and behavioral deficits in an Alzheimer's disease mouse model*. Journal of Neuroinflammation, 2007. 4: p. 21.
34. Patel, J.R. and G.J. Brewer, *Age-related changes to tumor necrosis factor receptors affect neuron survival in the presence of beta-amyloid*. J Neurosci Res, 2008. 86(10): p. 2303-13.
35. Piau, A., et al., *Nouvelles thérapeutiques dans la maladie d'Alzheimer: vers un traitement visant à ralentir la progression de la maladie*. Les cahiers de l'année gérontologique, 2009. 1(1): p. 15-25.
36. Racchi, M., et al., *Alzheimer's disease: new diagnostic and therapeutic tools*. Immun Ageing, 2008. 5: p. 7.
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