

CURRICULUM VITAE

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Name: Jerome Elliot Groopman

Address: 330 Brookline Avenue, RN325D, Boston, MA 02215

Place of Birth: New York City, New York

Education:

1972 B.A. Summa Cum Laude (Political Philosophy), Columbia College
1976 M.D. Columbia College of Physicians and Surgeons

Postdoctoral Training:

Internships and Residencies:

1976-1978 Intern and Resident in Medicine, Massachusetts General Hospital,
Boston, MA

Fellowships:

1976-1978 Clinical Fellow in Medicine, Harvard Medical School, Boston, MA
1978-1979 Fellow, Division of Hematology-Oncology, University of
California, Los Angeles, CA
1979-1980 Research Fellow in Laboratory of Dr. David Nathan and Dr.
Charles Scher, Boston Children's Hospital - Sidney Farber Cancer Center,
MA

Licensure and Certification:

1977 National Board of Medical Examiners
1977 Massachusetts License Registration No. 42780
1978 California License Registration
1979 Diplomate, American Board of Internal Medicine
1981 Specialty Board Certification in Medical Oncology
1984 Specialty Board Certification in Medical Hematology

Academic Appointments:

1980-1983	Assistant Professor of Medicine, Department of Medicine, UCLA School of Medicine, Los Angeles, CA
1983-1986	Assistant Professor of Medicine, Harvard Medical School, Boston, MA
1986-1993	Associate Professor of Medicine, Harvard Medical School, Boston, MA
1992-	Dina and Raphael Recanati Chair, Harvard Medical School, Boston, MA
1993-	Professor of Medicine, Harvard Medical School, Boston, MA

Hospital Appointments:

1980-1983	Attending Physician, UCLA Medical Center, Los Angeles, CA
1983-1996	Attending Physician, New England Deaconess Hospital, Boston, MA
1985-1996	Chief, Division of Hematology/Oncology, New England Deaconess Hospital, Boston, MA
1996-	Attending Physician, Beth Israel Deaconess Medical Center, Boston, MA (two hospitals merged: New England Deaconess Hospital and Beth Israel Hospital, Boston)
1996-	Chief, Division of Experimental Medicine, Beth Israel Deaconess Medical Center, Boston, MA (two hospitals merged: New England Deaconess Hospital and Beth Israel Hospital, Boston)

Awards and Honors:

1971	Phi Beta Kappa
1972	Ehrenberg Award (Excellence in Premedical Studies)
1976	Alpha Omega Alpha
1976	Robert Loeb Prize (Internal Medicine Prize)
1976	Janeway Award (Valedictorian Medical Class)
1988	Fellow, American College of Physicians
1988	Community Sanctity of Life Award, Baccalaureate Service, Brandeis University
1997	Best Wellness Book, Books for a Better Life Award, "The Measure of Our Days"
1998	Presidential Citation for outstanding commitment to patient advocacy & dedication to improving the health of the citizens of the Commonwealth, The Massachusetts Medical Society
1998	American Medical Writers Association Award for

	excellence in medical communication
2003	John McGovern Medal, American Medical Writers Association for preeminent contributions to medical communication
2003	The City of Newton Appreciation for contribution to the literary arts and in pursuit of literary excellence
2004	Books for a Better Life Award; Best Wellness Book, "The Anatomy of Hope"
2005	Christopher Award: "The Anatomy of Hope"
2006	Victor Cohn Prize for Excellence in Medical Science Reporting
2007	The Quill Book Award, Health/Self-Improvement category: "How Doctors Think."
2007	Books for a Better Life Award; Best Wellness Book, "How Doctors Think."
2008	Knowles Scholar: in recognition of undergraduate teaching. Harvard College
2009	Knowles Scholar: in recognition of undergraduate teaching. Harvard College
2011	Humanism in medicine award; integrity, clinical excellence, compassion, altruism, respect, empathy and service. The Arnold P. Gold Foundation.
2017	Nicholas E. Davies Memorial Scholar Award for outstanding contributions to humanism in medicine and in recognition of scholarly activities in history, literature, philosophy and ethics. American College of Physicians

Major Committee Assignments:

National and Regional:

1983-1985	Consultant on AIDS, Center for Disease Control, Atlanta, GA
1983-1984	Scientific Advisory Committee, Kaposi's Sarcoma Foundation, San Francisco, CA
1983-1985	Consultant, National Cancer Institute Task Force on AIDS, Bethesda, MD
1983-1986	AIDS Consultant, Fenway Community Health Clinic, Boston, MA
1983-	AIDS Advisory Committee to the Governor of Massachusetts
1986-1987	National Academy Sciences/IOM Advisory Committee on AIDS
1987-	AIDS Basic Science Research Study Section A, NIAID, Bethesda, MD
1987-1989	Chairman, Biological Response Modifiers Committee, NIH, AIDS Clinical Trials Group
1989-	AIDS Advisory Committee, NHLBI, Bethesda, MD
1990-1994	Chairman, FDA Biological Response Modifiers Advisory Committee
1990-1997	Board of Directors, American Foundation for AIDS Research

1991-1996	Scientific Advisory Committee, Boston Medical Foundation
1991-	Board of Trustees, American Physicians Fellowship For Medicine In Israel
1994-	Consultant, Center for Biological Evaluation and Research, FDA

- 1995- Member, Food and Drug Administration's Senior Biomedical Service (SBRS) Credentials Committee
- 1999-2005 Member, The Board of Syndics of Harvard University Press

Medical School:

- 1988-1997 Member, Institute Committee, Harvard AIDS Institute, Harvard Medical School, Boston, MA
- 1988-1994 Member, AIDS Policy Committee, Harvard Medical Center, Harvard Medical School, Boston, MA
- 1989- University Ad Hoc Committee on Animal Research, Harvard University, Boston, MA
- 1995-1998 Member, Standing Committee on Promotions, Reappointments, and Appointments in the Faculty of Medicine, Harvard Medical School, Boston, MA
- 1996- Member, Faculty Council in the Faculty of Medicine, Harvard Medical School, Boston, MA

Hospital:

- 1981-1983 Director, Kaposi's/AIDS Clinic, UCLA, CA
- 1983-1996 Committee on Clinical Investigation, New England Deaconess Hospital, Boston, MA
- 1989-1996 Deaconess Medicine Executive Committee, Deaconess Hospital, Boston, MA
- 1989-1996 Department of Medicine Executive Committee, Deaconess Hospital, Boston, MA
- 1995-1996 DPPG Interdepartmental Executive Committee, Deaconess Hospital, Boston, MA
- 1995-1996 Fellowship Training Programs Committee, Deaconess Hospital, Boston, MA
- 1995-1996 Surgery Search Committee, Deaconess Hospital, Boston, MA
- 1996- Transition Planning Committee, Beth Israel Deaconess Medical Center, Boston, MA
- 1996- Scientific Advisory Committee, Beth Israel Deaconess Medical Center, Boston, MA
- 1996- Council for Research, Beth Israel Deaconess Medical Center, Boston, MA
- 1996- Promotions Committee, Department of Medicine, Beth Israel Deaconess Medical Center, Boston, MA
- 1996-1997 Clinical Trials Unit Steering Committee, Beth Israel Deaconess Medical Center, Boston, MA
- 1998- Advisory Member, Programmatic Research Strategy Committee,

1998- Beth Israel Deaconess Medical Center, Boston, MA
Member, Beth Israel Deaconess Cancer Center

Memberships, Offices and Committee Assignments in Professional Societies:

1978- Member, American Association for the Advancement of Science
 1978- American College of Physicians
 1978-1998 American Federation for Medical Research
 1978- American Society of Hematology
 1978- American Society of Clinical Oncology
 1983-1994 New England Cancer Society
 1985- American Society for Clinical Investigation
 1988- Program Committee, American Society Clinical Oncology
 1988- American Society for Microbiology
 1998- Member, Interurban Clinical Club
 2000- Member, National Academy of Medicine, National Academies of Sciences,
 Engineering, and Medicine (“the Academies”)
 (name changed from Institute of Medicine as of July 1, 2015)
 2002- Member, International Society for Stem Cell Research
 2007- Fellow, American Association for the Advancement of Science
 2008- Member, American Academy of Arts & Sciences

Editorial Boards:

1988-1990 Member, Editorial Board: *Blood*, The Journal of the American
 Society of Hematology
 1988-1997 Editor: *AIDS*
 1988-1992 Section Editor: *AIDS Research and Human Retroviruses*
 1989- Member, Editorial Board: *Immunodeficiency Reviews*, Harwood
 Academic Publishers
 1989-2003 Member, Editorial Board: *Blood Reviews*
 1989-1997 Co-Editor: *Research in Virology*
 1989- Member, Editorial Board: *Journal of Acquired Immune Deficiency
 Syndrome*
 1990-1997 Member, Editorial Advisory Board: *Journal of NIH Research*
 1993- Member, Editorial Board: *Stem Cells*
 1995- Member, Editorial Advisory Board: *Clinical Cancer Research*
 1998-2007 Associate Editor, *Blood*
 1997- Contributing Columnist, *The Jewish Advocate*
 1998- Staff Writer, *The New Yorker*

1999-2005 Member, The Board of Syndics of Harvard University Press
2008- Columnist, American College of Physicians Internist

Major Research Interests:

1. Relationship among retroviruses, immune function and cancer (AIDS)
2. Hematopoiesis
3. Polypeptide Growth Factors
4. Cytokines
5. Signal Transduction

Principal Clinical and Hospital Service Responsibilities:

1980-1983 Attending Physician, University of California, Los Angeles, CA
1983-1996 Attending Physician, New England Deaconess Hospital, Boston, MA
1996- Attending Physician, Beth Israel Deaconess Medical Center,
Boston, MA (two hospitals merged: New England Deaconess Hospital and
Beth Israel Hospital, Boston)

Major Administrative Responsibilities:

1985-1996 Chief, Division of Hematology/Oncology, New England
Deaconess Hospital, Boston, MA
1986- Principal Investigator, AIDS Clinical Trials Group (ACTG), New
England Deaconess Hospital
1996- Chief, Division of Experimental Medicine and Hematology
Oncology Research, Beth Israel Deaconess Medical Center, Boston, MA
(two hospitals merged: New England Deaconess Hospital and Beth Israel
Deaconess Medical Center, Boston, MA)

Teaching Experiences:

1978-1983 Lecturer, Modern Hematology, University of California, Los Angeles, CA
1978-1983 Lecturer, University of California, Los Angeles: Ongoing
instruction of residents and medical students on the hematology/oncology
consultation service
1982-1983 Lecturer, Infectious Disease, American College of Physicians,

- Stanford University
- 1983- Preceptor, Introduction to Clinical Medicine, Harvard Medical School, Boston, MA
- 1983- Attending Physician, Harvard Medical School, Boston, MA:
Ongoing instruction of fellows, residents and medical students in hematology/oncology
- 1984-1985 Lecturer, Hematology Course, Harvard Medical School, Boston, MA
- 1984- Lecturer, Infectious Disease Course, Harvard Medical School, Boston, MA
- 1985- Lecturer, Harvard/MIT HST Science Technology Program, Harvard Medical School
- 1985 Co-Director, NIAID Course on AIDS, Boston, MA
- 1985-1988 Director, Education Program, American Society of Hematology
- 1986-1990 Director, Educational Program, American Society of Clinical Oncology
- 1987 Lecturer, American Cancer Society
- 1989 Visiting Professor, Cornell Medical Center
- 1990 Visiting Professor, Beth Israel Medical Center, New York
- 1990 Visiting Professor, Veterans Administration Medical Center, Boston
- 1991 Visiting Professor, New York University Medical Center
- 1991 Visiting Professor, Yale University Medical School
- 1992 Visiting Professor, Memorial Sloan-Kettering Cancer Center, New York
- 1996 Meet The Professor, American Society of Hematology
- 1996 Chair, Education Session in HIV and Hematopoiesis, American Society of Hematology
- 1998- Lecturer, Advanced Biomedical Science Program, Revisiting Basic Sciences and Pathology Course, Harvard Medical School
- 1998 Meet The Expert, American Society of Hematology
- 1998 Chair, Education Session in Hematology and AIDS, American Society of Hematology
- 2004- Professor, Freshman Seminar, Spring Semester, Harvard University

BIBLIOGRAPHY

Original Reports:

1. Nathan I, Groopman JE, Quan SG, Bersch N, Golde DW: Immune (gamma) interferon produced by a human T-lymphoblast cell line. *Nature*. 1981;292:842-844.
2. Bersch N, Groopman JE, Golde DW. In vitro erythroid responsiveness to natural and synthetic (recombinant) insulins. *J Clin Endo Metabol*. 1982;55(6):1209-1211.
3. Fogelman AM, Seager J, Groopman JE, Berliner JA, Haberland ME, Edwards PA, Golde DW. Lymphokines secreted by an established lymphocyte line modulate receptor-mediated endocytosis in macrophages derived from human monocytes. *J Immunol*. 1983;131:2368-2373.
4. Mitsuyasu R, Groopman JE, Volberding P. Cutaneous reaction to trimethoprim-sulfamethoxazole in patients with AIDS and Kaposi's sarcoma. *N Engl J Med*. 1983;308(25):1535-1536.
5. Fahey JL, Prince H, Weaver M, Groopman JE, Visscher B, Schwartz K, Detels R. Quantitative changes in T-helper or T-suppressor/cytotoxic lymphocyte subsets that distinguish acquired immune deficiency syndrome from other immune subset disorders. *Am J Med*. 1984;76:95-100.
6. Groopman JE, Gottlieb MS, Goodman J, Mitsuyasu RT, Conant MA, Prince H, Fahey JL, Derezin M, Weinstein WM, Casavante C, Rothman J, Rudnick SA, Volberding PA. Recombinant alpha-2 interferon therapy for Kaposi's sarcoma associated with the acquired immunodeficiency syndrome. *Ann Intern Med*. 1984;100:671-676.
7. Safai B, Sarngadharan M, Groopman JE, Arnett K, Popovic M, Sliski A, Schupbach J, Gallo RC. Seroepidemiologic study of human T-lymphotropic retrovirus type III in acquired immunodeficiency syndrome. *Lancet*. 1984 i:1428-1430.
8. Salahuddin SZ, Groopman JE, Markham PD, Sarngadharan MG, Redfield RR, McLane MF, Essex M, Sliski A, Gallo RC. HTLV-III in symptom-free seronegative persons. *Lancet*. 1984;ii:1418-1420.
9. Groopman JE, Salahuddin SZ, Sarngadharan MG, Mullins JI, Sullivan JL, Mulder C, O'Hara CJ, Cheeseman SH, Haverkos H, Forgacs P, Riedel N, McLane MF, Essex M, Gallo RC. Virologic studies in a case of transfusion associated AIDS. *N Engl J Med*. 1984;311(22):1419-1422.

10. Jaffe H, Francis DP, McLane MF, Cabradilla C, Curran JW, Kilbourne BW, Lawrence DN, Haverkos HW, Spira TJ, Dodd RY, Gold J, Armstrong D, Ley A, Groopman JE, Mullins J, Lee T-H, Essex M. Transfusion-associated AIDS: Serologic evidence of human T-cell leukemia virus infection of donors. *Science*. 1984;223:1309-1312.
11. Merrill JE, Kutsamai S, Hofman F, Groopman JE, Golde DW. Proliferation of astroglia and oligodendroglia proliferate in response to human T-cell derived factors. *Science*. 1984;224:1428-1430.
12. Groopman JE, Salahuddin SZ, Sarngadharan MG, Markham PD, Gonda M, Sliski A, Gallo RC. HTLV-III in saliva of people with AIDS-related complex and healthy homosexual men at risk for AIDS. *Science*. 1984;226:447-449.
13. Zagury D, Bernard J, Leibowitch J, Safai B, Groopman JE, Feldman M, Sarngadharan MG, Gallo RC. HTLV-III in cells cultured from semen of two patients with AIDS. *Science*. 1984;226:449-451.
14. Shaw GM, Hahn BH, Arya SK, Groopman JE, Gallo RC, Wong-Staal F. Molecular characterization of human T-cell leukemia (lymphotropic) virus type III in the acquired immunodeficiency syndrome. *Science*. 1984;226:1165-1171.
15. Groopman JE, Sarngadharan MG, Salahuddin SZ, Buxbaum R, Huberman MS, Kinniburgh J, Sliski A, McLane MF, Essex M, Gallo RC. Apparent transmission of human T-cell leukemia virus type III to a heterosexual woman with AIDS. *Ann Intern Med*. 1985;102(1):63-66.
16. Groopman JE, Mayer KH, Sarngadharan MG, Salahuddin SZ, Buxbaum R, Huberman MS, Kinniburgh J, Sliski A, McLane MF, Essex M, Gallo RC. Seroepidemiology of human T-lymphotropic virus type III among homosexual men with the acquired immunodeficiency syndrome or generalized lymphadenopathy and among asymptomatic controls in Boston. *Ann Intern Med*. 1985;102(3):334-337.
17. Groopman JE, Hartzband PI, Shulman L, Salahuddin SZ, Sarngadharan MG, McLane MF, Essex M, Gallo RC. Antibody seronegative human T-lymphotropic virus type III (HTLV-III)-infected patients with acquired immunodeficiency syndrome or related disorders. *Blood*. 1985;66(3):742-744.
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- infection among health care workers: Association with needlestick injuries. *JAMA*. 1985;254(15):2089-2093.
20. Broder S, Collins JM, Markham PD, Redfield RR, Hoth DF, Groopman JE, Gallo RC, Yarchoan R, Lane HC, Klecker RW, Mitsuya H, Gelmann E, Resnick L, Myers CE. Effects of suramin on HTLV-III/LAV infection presenting as Kaposi's sarcoma or AIDS-related complex: Clinical pharmacology and suppression of virus replication in vivo. *Lancet*. 1985;i:627-630.
 21. Ho DD, Rota TR, Schooley RT, Kaplan JC, Allan JD, Groopman JE, Resnick L, Felsenstein D, Andrews CA, Hirsch MS. Isolation of HTLV-III from cerebrospinal fluid and neural tissues of patients with neurologic syndromes related to the acquired immunodeficiency syndrome. *N Engl J Med*. 1985;313(24):1493-1497.
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 23. Dowbenko DJ, Bell JR, Benton CV, Groopman JE, Njuyen H, Vetterlein D, Capon DJ, Lasky LA. Bacterial expression of the acquired immunodeficiency syndrome retrovirus p24 gag protein and its use as a diagnostic reagent. *Proc Natl Acad Sci USA*. 1985;82:7748-7752.
 24. Shaw GM, Harper ME, Hahn BH, Epstein LG, Gajdusek DG, Price RW, Nania BA, Petit CK, O'Hara CJ, Groopman JE, Cho ES, Oleske JM, Wong-Staal F, Gallo RC. HTLV-III infection in brains of children and adults with AIDS encephalopathy. *Science*. 1985;227:177-182.
 25. Barin F, McLane MF, Allan JS, Lee T-H, Groopman JE, Essex M. Virus envelope protein of HTLV-III represents major target antigen for antibodies in AIDS patients. *Science*. 1985; 228:1094-1096.
 26. Allan JS, Coligan JE, Lee T-H, McLane MF, Kanki PH, Groopman JE, Essex M. A new HTLV-III/LAV encoded antigen detected by antibodies from AIDS patients. *Science*. 1985;230:810-813.
 27. Mayer KH, Ayotte D, Groopman JE, Stoddard AM, Sarngadharan M, Gallo R. Association of human T-lymphotropic virus type III antibodies with sexual and other behaviors in a cohort of homosexual men from Boston with and without generalized lymphadenopathy. *Am J Med*. 1986;80(3):357-363.

28. Clairmont GH, Zon LI, Groopman JE. Hemophilus parainfluenzae prostatitis in a homosexual man with chronic lymphadenopathy syndrome and HTLV-III infection. *Am J Med.* 1986;82:175-178.
29. Mayer KH, Stoddard A, McCusker J, Ayotte D, Ferriani R, Groopman JE. Human T-lymphotropic virus type III in high risk, antibody-negative homosexual men. *Ann Intern Med.* 1986;104(2):194-196.
30. Anderson KC, Gorgone BA, Marlink RG, Ferriani R, Essex ME, Benz PM, Groopman JE. Transfusion acquired human immunodeficiency virus infection among immunocompromised hosts. *Ann Intern Med.* 1986;105:519-527.
31. Cabradilla CD, Groopman JE, Lanigan J, Renz M, Lasky LA, Capon DJ. Serodiagnosis of antibodies to the human AIDS retrovirus with a bacterially synthesized env polypeptide. *Biotechnology.* 1986;4:128-133.
32. Groopman JE, Sullivan JL, Mulder C, Ginsburg D, Orkin SH, O'Hara CJ, Falchuk K, Wong-Staal F, Gallo RC. Pathogenesis of B cell lymphoma in a patient with AIDS. *Blood.* 1986;67(3):612-615.
33. Archibald DW, Zon L, Groopman JE, McLane MF, Essex M. Antibodies to human T-lymphotropic virus III (HTLV-III) in saliva of acquired immunodeficiency syndrome (AIDS) patients and in persons at risk for AIDS. *Blood.* 1986;67(3):831-834.
34. Salahuddin SZ, Rose RM, Groopman JE, Markham PD, Gallo RC. Human T-lymphotropic virus type III infection of human alveolar macrophages. *Blood.* 1986;68(1):281-284.
35. Seage GR, Landers S, Barry A, Groopman JE, Lamb GA, Epstein AM. Medical care costs of AIDS in Massachusetts. *JAMA.* 1986;256(22): 3107-3109.
36. Archibald DW, Zon LI, Groopman JE, Allan JS, McLane MF, Essex ME. Salivary antibodies as a means of detecting human T cell lymphotropic virus type III/lymphadenopathy-associated virus infection. *J Clin Microbiology.* 1986;5:873-875.
37. Groopman JE, Hammer SM, Sallan SE, Allan JD. Human T-lymphotropic virus type III infection in previously immunocompromised hosts. *J Clin Oncol.* 1986;4(4):540-543.
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- Serological characterization of HTLV-III infection in AIDS and related disorders. *J Infect Dis.* 1986;153(4): 736-742.
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 41. Hammer SM, Gillis JM, Groopman JE, Rose RM. In vitro modification of human immunodeficiency virus infection by granulocyte-macrophage colony-stimulating factor and gamma interferon. *Proc Natl Acad Sci USA.* 1986;83:8734-8738.
 42. Lee T-H, Coligan JE, Allan JS, McLane MF, Groopman JE, Essex M. A new HTLV-III/LAV protein encoded by a gene found in cytopathic retroviruses. *Science.* 1986;231:1546-1549.
 43. Lasky LA, Groopman JE, Fennie CW, Benz PM, Capon DJ, Dowbenko DJ, Nakamura GR, Nunes WM, Renz ME, Berman PW. Neutralization of the AIDS retrovirus by antibodies to a recombinant envelope glycoprotein. *Science.* 1986;233:210-212.
 44. Groopman JE, Benz PM, Ferriani R, Mayer K, Allan JD, Weymouth LA. Characterization of serum neutralization response to the human immunodeficiency virus (HIV). *AIDS Res Hum Retroviruses.* 1987;3(1):71-86.
 45. Allan JS, Coligan JE, Lee T-H, Barin F, Kanki PJ, M'Boup S, McLane MF, Groopman JE, Essex M. Immunogenic nature of a pol gene product of HTLV-III/LAV. *Blood.* 1987;69(1):331-333.
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 48. Burns JJ, Groopman JE. AIDS: Strategic considerations for developing antiviral drugs. *Issues in Science and Technology.* 1987;3(2):102-110.
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 50. Benotti PN, Jenkins RL, Cady B, O'Hara C, Groopman JE. Surgical approach to generalized lymphadenopathy in homosexual men. *J Surg Oncol.* 1987;36:231-234.

51. Donahue RE, Johnson MM, Zon LI, Clark SC, Groopman JE. Suppression of in vitro hematopoiesis following human immunodeficiency virus infection. *Nature*. 1987;326:200-203.
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53. Richman DD, Fischl MA, Grieco MH, Gottlieb MS, Volberding PA, Laskin OL, Leedom JM, Groopman JE, Mildvan D, Hirsch MS, Jackson GG, Durack DT, Nusinoff-Lehrman L, AZT Collaborative Working Group. The toxicity of Azidothymidine (AZT) in the treatment of patients with AIDS and AIDS-related complex. *N Engl J Med*. 1987;317(4):194-197.
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55. Smith DH, Byrn RA, Marsters SA, Gregory T, Groopman JE, Capon DJ. Blocking of HIV-1 infectivity by a soluble, secreted form of the CD4 antigen. *Science*. 1987;238:1704-1707.
56. McCusker J, Stoddard AM, Mayer KH, Cowan DN, Groopman JE. Behavioral risk factors for HIV infection among homosexual men at a Boston Community Health Center. *Am J Public Health*. 1988;78(1):68-71.
57. Groopman JE, Caiazzo T, Thomas MA, Ferriani RA, Saltzman S, Moon M, Seage G, Horsburgh CR, Jr., Mayer K. Lack of evidence of prolonged HIV infection prior to antibody seroconversion. *Blood*. 1988;71:1752-1754.
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60. Ezekowitz RAB, Kuhlman M, Groopman JE, Byrn RA. A human serum mannose-binding protein inhibits in vitro infection by the human immunodeficiency virus. *J Exp Med*. 1988;169:185-196.
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62. Byrn RA, Sekigawa I, Chamow S, Johnson JS, Gregory TJ, Capon D, Groopman JE. Characterization of in vitro inhibition of human immunodeficiency virus by purified recombinant CD4. *J Virol*. 1989;63:4370-4375.
63. Capon DJ, Chamow SM, Mordenti J, Marsters SA, Gregory T, Mitsuya H, Byrn RA, Lucas C, Wurm FM, Groopman JE, Broder S, Smith DH. Designing CD4 immunoadhesins for AIDS therapy. *Nature*. 1989;337:525-531.
64. Molina JM, Scadden DT, Byrn RA, Dinarello CA, Groopman JE. Production of tumor necrosis factor α and interleukin- 1β by monocytic cells infected with human immunodeficiency virus. *J Clin Invest*. 1989;84:733-737.
65. Berman PW, Riddle L, Nakamura G, Haffar OK, Nunes WM, Skechel P, Byrn RA, Groopman JE, Matthews T, Gregory T. Expression and immunogenicity of the extracellular domain of the human immunodeficiency virus type 1 envelope glycoprotein, gp160. *J Virol*. 1989;63:3489-3498.
66. Kim SY, Byrn RA, Groopman JE, Baltimore D. Temporal aspects of DNA and RNA synthesis during HIV infection: Evidence for differential gene expression. *J Virol*. 1989;63:3708-3713.
67. Kim SY, Ikeuchi K, Byrn RA, Groopman JE, Baltimore D. Lack of a negative influence on viral growth by the nef gene of human immunodeficiency virus type 1. *Proc Natl Acad Sci USA*. 1989;86:9544-9548.
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