

## DAVID PICKAR, M.D.

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David Pickar, M.D., is Adjunct Professor of Psychiatry at Johns Hopkins Medical School and Uniformed Services University of the Health Sciences. Dr. Pickar served in the Intramural Research Program (IRP) of the National Institute of Mental Health (NIMH) for over 20 years where he was the Chief of the Experimental Therapeutics Branch and Chair of the Tenure and Promotion Committee. Dr. Pickar directed the 4-East Research Unit at the NIH Clinical Center for studies of schizophrenia and psychosis for over a decade. He has published over 300 papers including first authored papers in *Science*, *Lancet*, *JAMA Archives of General Psychiatry*, *American Journal of Psychiatry*. Dr. Pickar has received numerous honors and awards in the course of his career, including the Judith Silver Memorial Young Scientist Award of the National Alliance for the Mentally Ill (NAMI) and the Meritorious Service Medal for Exemplary Performance of Duty from the U.S. Department of Health and Human Services. He has served as the NIMH Consultant to the U.S. Secret Service and on the Scientific Advisory Committee of the American Foundation for AIDS Research. He is a Fellow of the American College of Neuropsychopharmacology and Distinguished Life Fellow of the American Psychiatric Association.

Dr. Pickar is a founder and President of Gabriel Sciences, a company whose mission is advancing treatment for schizophrenia. Dr. Pickar and Gabriel Sciences, LLC have completed four NIH SBIR grants. Dr. Pickar was co-founder of Comprehensive Neuroscience, Inc a clinical trials and medical communication company where he served as a Director, Executive Vice-President and Chief Science Officer. Dr. Pickar is the inventor of two US patents.

Dr. Pickar is a 1969 graduate of Rutgers College with Phi Beta Kappa distinction and received his medical degree from Yale University School of Medicine in 1973. After completing his residency in psychiatry at Yale in 1977, Dr. Pickar joined the NIMH as

(b) (6). Dr. Pickar retired as (b) (6) in 1999 and resides in (b) (6) with his wife, (b) (6) and daughters, (b) (6).

## Current Positions and Activities

Private Practice of Psychiatry  
Clinical Neuropharmacology and General Psychiatry

Academic Appointments  
Professor (Adjunct), Psychiatry, Johns Hopkins University, Baltimore, Maryland  
Professor (Adjunct), Psychiatry, Uniformed Services University of the Health Sciences, Bethesda, Maryland

Forensic Psychiatry  
Consultation and Testimony for Civil and Criminal Matters including US Federal Court, DC Superior Court, Maryland Superior Court, Virginia Superior Court, Florida Superior Court, Consultant to Special Prosecutor US Dept of Justice

Founder and President, Gabriel Sciences, LLC

Gabriel Sciences, LLC is a biopharmaceutical company whose mission is improved treatment for psychiatric illness.

### Grants

PI for R43MH67351-01 (NIH SBIR Phase I): Genetic Screen for Antipsychotic Drug Response  
PI for R44MH67351-02 (NIH SBIR Phase II): Genetic Screen for Antipsychotic Drug Response  
Project Duration: 9/25/02-12/31/06  
PI R44 MH081365-01, (NIH SBIR Phase I) Triple Re-Uptake Inhibitors: Potential Antidepressants  
Project Duration: 9/15/07 – 9/15/08)

## Past Position and Activities

Founder and President, Potomac Pharma, Inc (2001)  
Potomac Pharma, Inc was established as a biopharmaceutical company whose mission is to develop new treatments for mental illness. (b) (4)

Founder and President, Comprehensive NeuroScience, Inc (1999)  
Comprehensive NeuroScience, Inc was established by central nervous system experts to harness knowledge across disciplines to create

more effective approaches for improving the quality and impact of mental health research, care management, and education - while simultaneously reducing cost and resource redundancy. Comprehensive NeuroScience continues as a vibrant viable operating company.

Member NIH Study Sections  
Regular participation in NIH SBIR and other Study Sections since 2001

FAES at NIH "Psychopharmacology and Neuroscience Course"  
Program Chair

## **Intramural Research Program, National Institute of Mental Health 1977-1999**

1977-1979 Clinical Associate, Clinical Neuropharmacology Branch  
1979-1981 Staff Psychiatrist and Chief, Unit on Studies of Drug Abuse  
1982-1987 Chief, Section on Clinical Studies, Clinical Neuroscience Branch  
1988-1990 Acting Chief, Clinical Neuroscience Branch  
1991-1999 Chief Experimental Therapeutics Branch

Developed and managed Research Unit at NIH Clinical Center for Schizophrenia focusing on longitudinal studies of experimental neuropharmacological agents. Reported time-dependent alterations in dopamine systems during antipsychotic drug treatment, demonstrated lack of effectiveness of beta-endorphin in schizophrenia, delineated clinical and biological properties of clozapine for treatment resistant schizophrenic patients. Developed and patented strategy of alpha<sub>2</sub> antagonist addition to D<sub>2</sub> blockade for the treatment of schizophrenia. Collaborated on PET and other imaging studies and pharmacogenetic studies of schizophrenia.

## **Education and Training**

1969 Bachelor of Arts  
Rutgers College, New Brunswick, NJ (Phi Beta Kappa)  
1973 Medical Degree  
Yale University School of Medicine, New Haven, CT  
1973-1974 Intern, Internal Medicine  
University of Kentucky Medical Center, Lexington, Ky  
1974-1977 Resident in Psychiatry  
Department of Psychiatry, Yale University School of Medicine, New Haven, CT  
1977-1979 Clinical Associate, Clinical Neuropharmacology Branch, Intramural Research Program, National Institute of Mental Health

## Patents (Inventor)

### US Patent # 5,492,907

Antipsychotic Composition and Method of Treatment  
(Assignee: US Dept HHS; Exclusive License to Potomac Pharma, Inc)

### US Patent #5,663,167

Antipsychotic Composition and Method of Treatment  
(Assignee: US Dept of HHS; Exclusive License to Potomac Pharma, Inc)



## Society Memberships:

Fellow, American College of Neuropsychopharmacology

Distinguished Life Fellow, American Psychiatric Association

Phi Beta Kappa

## Board Certifications and Licensure

1974 Diplomat, National Board of Medical Examiners  
1978 Diplomat, The American Board of Psychiatry and Neurology  
1985 Examiner for Oral Examination  
1990 Examiner for Oral Examination

### Medical License:

State of Maryland  
State of Virginia  
District of Columbia

## Selected Honors and Appointments

1981, 1984 Participant in the Exchange of Visits of World Health Organization  
Investigators in Biologic Psychiatry  
1982 A.E. Bennett Clinical Science Neuropsychiatric Research Award of the  
Society of Biological Psychiatry  
1982 NIMH Consultant to the United States Secret Service  
1982 1<sup>st</sup> Prize, Plotzitzko Award (West Germany), for Research in "Endogenous  
Psychosis"  
1984 2nd Prize, Best Journal Paper Award, Academy of Psychosomatic Medicine,  
for "Biologic Tests in Depression"

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- 1986 Founding Scientific Advisory Committee Member, American Foundation for AIDS Research
- 1986 Judith Silver Memorial Young Scientist Award of the National Alliance for the Mentally Ill
- 1986-87 Chair, Schizophrenia Colloquium, NIMH Intramural Research Program
- 1987 Co-Chair, Panel on Neurochemistry/Neuropharmacology, NIMH National Plan for Schizophrenia Research

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- 1988-99 Program Chair, FAES course: "Psychopharmacology in Practice: Clinical and Research Update"
- 1991-94 Chair, PET Users' Committee, IRP, NIMH
- 1993 The Meritorious Service Medal for Exemplary Performance of Duty, DHHS, PHS
- 1996 Advisory Board to the National Alliance of the Mentally Ill
- 1996-99 NIMH Institutional Review Board
- 1998-1999 Chair IRP, NIMH Tenure and Promotion Committee
- 2011-2012 Program Chair, FAES course: "Psychopharmacology in Practice: Clinical and Research Update"
- 2014 Distinguished Life Fellow, American Psychiatric Association

### Clinical Research Experience

Widely experienced in scientific and clinical elements of psychopharmacology. Experienced in clinical drug development including assessment of toxicology and clinical data.

1977- 1999

Principal and Associate Investigator in more than 30 Intramural NIMH IRB approved clinical research protocols.

2000-2002

Investigator in over 25 pharmaceutical industry sponsored protocols

2003-2005

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PI for "Clinical Assessment of Schizophrenic Patients and DNA collection for Candidate Gene Analysis" (Gabriel Pharma, LLC)

### Abstracts and Presentations

Over 100 abstracts and presentations at scientific meetings including the Annual Meeting for the Society of Neuroscience, Society of Biological Psychiatry, American Psychiatric Association, American College of Neuropsychopharmacology, Congress

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Curriculum Vitae

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International of Neuropharmacology, World Federation of Biological Psychiatry.  
Grand Round presentations at John Hopkins, Yale, Harvard, Columbia, U of  
Pittsburgh, U of Chicago and numerous other academic settings.

APPEARS THIS WAY ON ORIGINAL.

## Publications

1. Kupfer DJ, Pickar D, Himmelhock JM, Detre TD: Are there two types of unipolar depression? *Arch Gen Psychiatry* 1975;32:866-871.
2. Pickar D, Sweeney DR, Maas JW, Heninger GR: Primary affective disorder, clinical state change and MHPG excretion. *Arch Gen Psychiatry* 1978;35:1378-1383.
3. Pickar D and Cohen RM: Implications of monoamine oxidase inhibitor induced hypomania. *Arch Gen Psychiatry* 1978;35:1393-1394.
4. Pickar D and Davies RK: Tardive dyskinesia in younger patients. *Am J Psychiatry* 1978;135:385-386.
5. Sweeney D, Pickar D, Redmond DE Jr, Maas JW: Noradrenergic and dopaminergic mechanisms in Gilles de la Tourette syndrome. *Lancet* 1978;1:872.
6. Pickar D, Sweeney DR, Maas JW, Heninger GR: MHPG Excretion. *Arch Gen Psychiatry* 1979;36:1030-1031.
7. Pickar D, Cohen RM, Murphy DL, Fried D: Tyramine infusions in bipolar illness: longitudinal changes in pressor sensitivity and behavioral effects. *Am J Psychiatry* 1979;136:1460-1463.
8. Sturges J, Sweeney DR, Pickar D: A follow-up neurobiological study: why volunteer? *J Med Ethics* 1979;5:9-12.
9. Sweeney DR, Maas JW, Pickar D: Urinary 3-methoxy-4-hydroxyphenethylene glycol and state variables in affective disorders. In: Usdin E (ed), *Catecholamines: Basic and Clinical Frontiers*. New York, Pergamon Press, 1979, pp. 1917-1919.
10. Cohen RM, Campbell IC, Cohen MR, Torda T, Pickar D, Siever LJ, Murphy DL: Presynaptic noradrenergic regulation during depression and antidepressant drug response. *Psychiatry Res* 1980;3:93-105.
11. Cohen RM, Pickar D, Murphy DL: Myoclonus-associated hypomania during MAO-inhibitor treatment. *Am J Psychiatry* 1980;137:105-106.
12. Gold PW, Extein I, Pickar D, Rebar R, Ross R, Goodwin FK: Acute intravenous methadone infusion suppresses plasma cortisol in depressed patients. *Am J Psychiatry* 1980;137:862-904.
13. Naber D, Pickar D, Dionne R, Bowie D, Ewells B, Moody T, Soble M, Pert C: Assay of endogenous opiate receptor ligands in human CSF and plasma. *Substance and Alcohol Actions/Misuse* 1980; 1:85-92.

14. Pickar D, Cutler NR, Naber D, Post RM, Pert CB, Bunney WE Jr: Plasma opioid activity in manic-depressive illness. *Lancet* 1980; 1:937.
15. Pickar D, Lake CR, Cohen RM, Jimerson DC, Murphy DL: Alterations in noradrenergic function during clorgyline treatment. *Comm Psychopharmacol* 1980; 4:379-386.
16. Schulz SC, Wagner R, van Kammen DP, Rogol AD, Davis GC, Wyatt RJ, Pickar D, Bunney WE Jr, Li CH: Prolactin response to  $\beta$ -endorphin in man. *Life Sci* 1980; 27:1735-1741.
17. Cohen MR, Cohen RM, Pickar D, Weingartner H, Murphy DL, Bunney WE Jr: Behavioral effects following high dose naloxone administration to normal volunteers. *Lancet* 1981; 1:1110.
18. Cohen MR, Nurnberger J, Pickar D, Gershon E, Bunney WE Jr: Dextro-amphetamine infusions in normals result in correlated increases of plasma  $\beta$ -endorphin and cortisol immunoreactivity. *Life Sci* 1981; 29:1243-1247.
19. Cohen MR and Pickar D: Pharmacological challenges to the endogenous opioid system in affective illness. *J Clin Psychopharmacol* 1981; 1:223-231.
20. Cohen MR, Pickar D, Dubois M, Roth YF, Naber D, Bunney WE Jr: Surgical stress and endorphins. *Lancet* 1981; 1:213-214.
21. Dubois M, Pickar D, Cohen RM, Roth Y, MacNamara T, Bunney WE Jr: Surgical stress in humans is accompanied by an increase in  $\beta$ -endorphin-immunoreactivity. *Life Sci* 1981; 29:1249-1254.
22. Extein I, Pickar D, Gold MS, Gold PW, Pottash ALC, Sweeney DR, Rebar R, Martin D, Goodwin FK: Methadone and morphine in depression. *Psychopharmacol Bull* 1981; 17:29-33.
23. Murphy DL, Lipper S, Pickar D, Jimerson D, Cohen RM, Garrick NA, Alterman IS, Campbell IC: Selective inhibition of monoamine oxidase type A: Clinical antidepressant effects and metabolic changes in man. In: Youdin M and Paykel E (eds), *Monoamine Oxidase Inhibitors - The State of the Art*. New York, Wiley, 1981, pp 189-206.
24. Murphy DL, Pickar D, Jimerson D, Cohen RM, Garrick NA, Karoum F, Wyatt RJ: Biochemical indices of the effects of selective MAO inhibitors (clorgyline, pargyline and deprenyl) in man. In: Usdin E, Dahl S, Gram LF, Lingjaerde O (eds), *Clinical Pharmacology in Psychiatry*. England, MacMillan Press Ltd, 1981, pp 308-316.
25. Murphy DL, Roy B, Pickar D, Lipper S, Cohen RM, Jimerson D, Lake CR, Muscettola G, Saavedra J, Kopin IJ: Cardiovascular changes accompanying monoamine oxidase inhibition in man. In: Usdin E, Weiner N, Creveling C (eds), *Function and Regulation*



- of Monoamine Enzymes: Basic and Clinical Aspects. McMillan, Hampshire, England, 1981, pp 549-560.
26. Naber D, Bullinger M, Zahn T, Johnson JL, Huhtaniemi P, Pickar D, Cohen MR, Bunney WE Jr: Stress effects on  $\beta$ -endorphin in human plasma: relationships to psychophysiological and psychological variables. *Psychopharmacol Bull* 1981;17:187-189.
  27. Naber D, Cohen RM, Pickar D, Kalin NS, Bunney WE Jr: Episodic secretion of opioid activity: evidence for a diurnal rhythm. *Life Sci* 1981;28:931-935.
  28. Naber D, Pickar D, Davis G, Cohen R, Jimerson D, Elchisak M, Defraites E, Kalin N, Risch C, Buchsbaum M: Naloxone effects on  $\beta$ -endorphin, cortisol, prolactin, growth hormone, HVA and MHPG in plasma of normal volunteers. *Psychopharmacology* 1981;74:125-128.
  29. Naber D, Pickar D, Post RM, van Kammen DP, Ballenger J, Waters RN, Bunney WE Jr: CSF opioid activity in psychiatric patients. In: Jansson B, Perris C, Struwe G (eds), *Biological Psychiatry*. Amsterdam, Elsevier, 1981, pp 372-375.
  30. Naber D, Pickar D, Post R, van Kammen DP, Ballenger JC, Goodwin FK, Bunney WE Jr: Endogenous opioid activity and  $\beta$ -endorphin immuno-reactivity in CSF of psychiatric patients and normal volunteers. *Am J Psychiatry* 1981;138:1457-1462.
  31. Naber D, Soble M, Pickar D: Ethanol increases opioid activity in plasma of normal volunteers. *Pharmakopsychiatria* 1981;14:160-161.
  32. Pickar D and Bunney WE Jr (for Collaborating Centers): Acute naloxone administration in schizophrenic and manic patients: A World Health Organization Collaborative Study. In: Jansson B, Perris C, Struwe G (eds), *Biological Psychiatry*. Amsterdam, Elsevier, 1981, pp 508-511.
  33. Pickar D, Cohen RM, Jimerson DC, Murphy DL: Tyramine infusions and selective MAO inhibitor treatment. I: changes in pressor sensitivity. *Psychopharmacology* 1981;74:4-7.
  34. Pickar D, Cohen RM, Jimerson DC, Lake RL, Murphy DL: Tyramine infusions and selective MAO inhibitor treatment. II: interrelationships among pressor sensitivity changes, platelet MAO inhibition and plasma MHPG reduction. *Psychopharmacology* 1981;74:8-12.
  35. Pickar D, Davis GC, Schulz CS, Extein I, Wagner R, Naber D, Gold PW, van Kammen DP, Goodwin FK, Wyatt RJ, Li CH, Bunney WE Jr: Behavioral and biological effects of acute  $\beta$ -endorphin injection in schizophrenic and depressed patients. *Am J Psychiatry* 1981;138:160-166.

36. Pickar D, Naber D, Post RM, van Kammen DP, Ballenger JC, Bunney WE Jr: Measurement of endorphins in CSF: Relationship to psychiatric diagnosis. In: Emrich HM (ed), *Modern Problems in Pharmacotherapy: The Role of Endorphins in Neuropsychiatry*. Basel, Karger, 1981, pp 246-262.
37. Pickar D, Naber D, Post RM, van Kammen DP, Ballenger JC, Rubinow D, Waters RN, Kaye WH, Ebert MH, Bunney WE Jr: Endogenous opioids and psychiatric illness: CSF studies. In: Collu R, Ducharme JR, Barbeau A, Tolis G (eds), *Brain Peptides and Hormones*. New York, Raven Press, 1981, pp 207-220.
38. Pickar D, Naber D, Post RM, van Kammen DP, Ballenger JC, Waters RN, Rubinow D, Goodwin FK, Bunney WE Jr: CSF endorphins in psychiatric patients. *Psychopharmacol Bull* 1981;17:75-78.
39. Post RM, Pickar D, Naber D, Ballenger JL, Uhde TW, Bunney WE Jr: Effect of carbamazepine on CSF opioid activity: relationship to antidepressant response. *Psychiatry Res* 1981;5:59-66.
40. Post RM, Rubinow DR, Gold PW, Ballenger JC, Goodwin FK, Pickar D, Naber D, Uhde TW, Reichlin W, Bollinger J, Bunney WE Jr: Somatostatin and opiate peptides in CSF of affectively ill patients: Effects of carbamazepine. In: Jansson B, Perris C, Struwe G (eds), *Biological Psychiatry*. Amsterdam, Elsevier, 1981, pp 301-322.
41. Rubinow DR, Post RM, Pickar D, Naber D, Ballenger JC, Bunney WE Jr: Relationship between urinary-free cortisol and CSF opioid binding activity in depressed patients and normal volunteers. *Psychiatry Res* 1981;5:87-93.
42. Schulz SC, van Kammen DP, Rogol AD, Ebert M, Pickar D, Cohen MR, Naber D: Amphetamine increases prolactin but not growth hormone or  $\beta$ -endorphin immunoreactivity in schizophrenic patients. *Psychopharmacol Bull* 1981;17:193-195.
43. Cohen MR, Cohen RM, Pickar D, Murphy DL, Bunney WE Jr: Physiological effects of high dose naloxone administration to normal adults. *Life Sci* 1982;30:2025-2031.
44. Cohen MR, Pickar D, Dubois M, Bunney WE Jr: Stress-induced plasma  $\beta$ -endorphin immunoreactivity may predict post-operative morphine usage. *Psychiatry Res* 1982;6:7-12.
45. Cohen RM, Campbell IC, Yamaguchi I, Pickar D, Kopin IJ, Murphy DL: Cardiovascular changes in response to selected monoamine oxidase inhibition in the rat. *Eur J Pharmacol* 1982;80:155-160.
46. Cohen RM, Pickar D, Dubois M, Bunney WE Jr: Clinical studies of stress and the endogenous opioid system. *Ann NY Acad Sci* 1982;398:424-432.
47. Cohen RM, Pickar D, Garnett D, Gillin JC, Murphy DL: REM suppression induced by selective MAO inhibitors. *Psychopharmacology* 1982;78:137-140.

48. Cohen RM, Weingartner H, Smallberg SA, Pickar D, Murphy DL: The concept of effort in the understanding of cognitive and motor deficits in depression. *Arch Gen Psychiatry* 1982;39:593-597.
49. Dubois M, Pickar D, Cohen MR, Gadde P, Macnamara TE, Bunney WE Jr: Effects of fentanyl on the response of plasma  $\beta$ -endorphin to surgery. *Anesthesiology* 1982;57:468-472.
50. Kaye W, Pickar D, Naber D, Ebert MH: CSF opioid activity in anorexia nervosa. *Am J Psychiatry* 1982;139:640-642.
51. Lake RC, Pickar D, Ziegler D, Lipper S, Slater S, Murphy DL: Elevated plasma norepinephrine in patients with major affective disorders. *Am J Psychiatry* 1982;139:1315-1318.
52. Murphy DL, Pickar D, Alterman I: Assessment of affective disorders. In: Burdock EI, Swdilovsky A and Gershon S (eds), *Quantitative Techniques for the Evaluation of the Behavior of Psychiatric Patients*. New York, Marcel Dekker, 1982, pp 355-392.
53. Naber D and Pickar D: Endorphins in CSF and plasma of psychiatric patients. *Drug Res* 1982;32:877-878.
54. Pickar D, Cohen MR, Dubois M, Bunney WE Jr: Response of plasma  $\beta$ -endorphin (ir) to surgical stress. *Psychopharmacol Bull* 1982;18:208-211.
55. Pickar D, Cohen MR, Naber D, Cohen RM: Clinical studies of the endogenous opioid system. *Biol Psychiatry* 1982;17:1243-1276.
56. Pickar D, Extein I, Gold PW, Naber D, Summers RS, Goodwin FK: Endorphins and affective disorders. In: Shah NS and Donald AG (eds), *Endorphins and Opiate Antagonists in Psychiatric Research*. New York, Plenum Press, 1982, pp 375-398.
57. Pickar D, Murphy DL, Cohen RM, Campbell IC, Lipper S: Selective and nonselective monoamine oxidase inhibitors: behavioral disturbances during their administration to depressed patients. *Arch Gen Psychiatry* 1982;39:535-540.
58. Pickar D, Naber D, Post RM, van Kammen DP, Kaye W, Rubinow D, Ballenger JC, Bunney WE Jr: Endorphins in CSF of psychiatric patients. *Ann NY Acad Sci* 1982;398:399-412.
59. Pickar D, Vartanian F, Bunney WE Jr, Maier HP, Gastpar MT, Prakash R, Setthi BV, Lideman R, Belgaer B, Tsultulkousa M, Junghunz G, Nedopil TN, Verhoeven W, van Praag H, Sartorius N: Short-term naloxone administration in schizophrenic and manic patients: a World Health Organization Collaborative Study. *Arch Gen Psychiatry* 1982;39:313-323.

60. Schulz SC, van Kammen DP, Pickar D, Cohen MR, Naber D: Response of plasma  $\beta$ -endorphin immunoreactivity to d-amphetamine and placebo in schizophrenic patients. *Psychiatry Res* 1982;7:177-178.
61. Boronow J, Pickar D, van Kammen DP, Paul SM: Normal ventricles and sulci in schizophrenic patients. *Psychopharmacol Bull* 1983;19:581-586.
62. Buchsbaum MS, Davis GC, Naber D, Pickar D: Pain enhances naloxone-induced hyperalgesia in humans as assessed by somatosensory evoked potentials. *Psychopharmacology* 1983;79:99-103.
63. Cohen MR, Cohen RM, Pickar D, Weingartner H, Murphy DL: High dose naloxone infusions in normals: dose-dependent behavior, hormonal, and physiological responses. *Arch Gen Psychiatry* 1983;40:613-619.
64. Cohen RM, Cohen MR, Weingartner H, Pickar D, Murphy DL: High dose naloxone affects task performance in normal subjects. *Psychiatry Res* 1983;8:127-136.
65. Cohen MR, Pickar D, Dubois M: The role of the endogenous opioid system in the human stress response. *Psychiatr Clin North Am* 1983;6:457-472.
66. Insel TR and Pickar D: Naloxone administration in obsessive-compulsive disorder: report of two cases. *Am J Psychiatry* 1983;140:1219-1220.
67. Kaye WH, Pickar D, Ebert MH, Naber D: The opioid system in anorexia nervosa. *Am J Psychiatry* 1983;140:371-372.
68. Murphy DL, Siever LJ, Cohen RM, Roy BF, Pickar D: Some clinical evidence supporting the possible involvement of neurotransmitter receptor sensitivity changes in the action of antidepressant drugs during longer-term treatment. In: Davis JM, Maas JW (eds), *The Affective Disorders*. Washington, DC, APA Inc., 1983, pp 317-332.
69. Naber D and Pickar D: The measurement of endorphins in body fluids. *Psychiatr Clin North Am* 1983;6:443-456.
70. Pickar D: Naloxone in schizophrenia. *Lancet* 1983;1:819.
71. Pickar D, Cohen MR, Dubois M: The relationship of plasma cortisol and  $\beta$ -endorphin immunoreactivity to surgical stress and post-operative analgesic requirement. *Gen Hosp Psychiatry* 1983;5:93-98.
72. Risch SC, Kalin NH, Janowsky DS, Cohen RM, Pickar D, Murphy DL: Co-release of ACTH and  $\beta$ -endorphin immunoreactivity in human subjects in response to central cholinergic stimulation. *Science* 1983;222:77.
73. Risch SC and Pickar D: Forward. *Psychiatr Clin North Am* 1983;6:363-364.

74. Siever LJ, Pickar D, Lake CR, Kopin IJ, Cohen RM, Uhde TW, Murphy DL: Extreme elevation in plasma norepinephrine associated with decreased  $\alpha$ adrenergic responsiveness. *J Clin Psychopharmacol* 1983;3:39-41.
75. Buchsbaum MS, DeLisi LE, Holcomb HH, Cappellett J, King AC, Johnson J, Hazlett E, Dowling-Zimmerman S, Post RM, Morihisa J, Carpenter W, Cohen RM, Pickar D, Weinberger DP, Margolin P, Kessler R: Anteroposterior gradients in cerebral glucose use in schizophrenia and affective disorders. *Arch Gen Psychiatry* 1984;41:1159-1166.
76. Bullinger M, Naber D, Pickar D, Cohen RM, Kalin NH, Pert A, Bunney WE Jr: Endocrine effects of the cold pressor test: relationships to subjective pain appraisal and coping. *Psychiatry Res* 1984;12:227-233.
77. Cohen MR, Cohen RM, Pickar D, Murphy DL: High dose naloxone in depression. *Biol Psychiatry* 1984;19:825-832.
78. Cohen MR, Pickar D, Cohen RM, Wise TN, Cooper JN: Plasma cortisol and  $\beta$ -endorphin immunoreactivity in human obesity. *Psychosom Med* 1984;46:454-462.
79. Cohen MR, Pickar D, Extein I, Gold MS, Sweeney DR: Plasma cortisol and  $\beta$ -endorphin immunoreactivity in nonmajor and major depression. *Am J Psychiatry* 1984;141:628-632.
80. Crawley JN, Ninan PT, Pickar D, Chrousos GP, Skolnick P, Paul SM: Behavioral and physiological responses to benzodiazepine receptor antagonists. *Psychopharmacol Bull* 1984;20:403-407.
81. Dubois M, Pickar D, Cohen M, MacNamara TE: Plasma  $\beta$ -endorphin variations during general anesthesia, surgical stress and opiate administration. In: Pancheri P, Zichella L, Falaschi P (eds), *Endorphins, Neuroregulators and Behaviour in Human Reproduction, Proceedings of the 3rd International Symposium on Psychoneuroendocrinology in Reproduction, Spoleto, Italy, 9-12 July, 1982*. Amsterdam, Excerpta Medica, 1984, pp 314-321.
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83. Hommer DW, Zahn T, Pickar D, van Kammen DP: Prazosin, a specific  $\alpha_1$  noradrenergic receptor antagonist, has no effect on symptoms but increases autonomic arousal in schizophrenic patients. *Psychiatry Res* 1984;11:193-204.
84. Muscettola G, Potter WZ, Pickar D, Goodwin FK: Urinary MHPG and major affective disorder: a replication and new findings. *Arch Gen Psychiatry* 1984;41:337-342.

85. Naber D, Bullinger M, Pickar D: Neuroendocrine, psychological and psychophysiological variables in human stress response. In: Pancheri P, Zichella L, Falaschi P (eds), Endorphins, Neuroregulators and Behaviour in Human Reproduction, Proceedings of the 3rd International Symposium on Psychoneuroendocrinology in Reproduction, Spoleto, Italy, 9-12 July 1982. Amsterdam, Excerpta Medica, 1984, pp 256-266.
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87. Pickar D, Cohen MR, Naber D, Post RM: The endogenous opioid system in human behavior. In: Pancheri P, Zichella L, Falaschi P (eds), Endorphins, Neuroregulators and Behaviour in Human Reproduction, Proceedings of the 3rd International Symposium on Psychoneuro-endocrinology in Reproduction, Spoleto, Italy, 9-12 July 1982. Amsterdam, Excerpta Medica, 1984, pp 50-63.
88. Pickar D, Cowdry RW, Zis AP, Cohen RM, Murphy DL: Mania and hypomania during antidepressant pharmacotherapy: Clinical and research implications. In: Post RM, Ballenger JC (eds), Neurobiology of Mood Disorders (Frontiers of Clinical Neuroscience), Vol. I. Baltimore, Williams and Wilkins Co., 1984, pp 836-845.
89. Pickar D, Dubois M, Cohen MR: Behavioral changes in a cancer patient following intrathecal  $\beta$ -endorphin administration. *Am J Psychiatry* 1984;141:103-104.
90. Pickar D, Labarca R, Linnoila M, Roy A, Hommer D, Everett D, Paul SM: Neuroleptic-induced decrease in plasma homovanillic acid and antipsychotic activity in schizophrenic patients. *Science* 1984;225:954-957.
91. Post RM, Pickar D, Ballenger J, Rubinow D, Naber D: Endogenous opiates in cerebrospinal fluid: relationship to mood and anxiety. In: Post RM, Ballenger JC (eds), Neurobiology of Mood Disorders (Frontiers of Clinical Neuroscience), Vol. I. Baltimore, Williams and Wilkins, Co., 1984, pp 356-368.
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