ECNP Seminar in

Neuropsychopharmacology

16-18 November 2018
Saint Petersburg,
Russian Federation

CONTENTS

Informational support was provided by Early Career Psychiatrists' Council of Russian Society of Psychiatrists (smu.psychiatr.ru).

INTRODUCTION

ECNP is an independent, non-governmental, scientific association dedicated to the science and treatment of disorders of the brain. Founded in 1987, its goal is to bring together scientists and clinicians to facilitate information-sharing and spur new discoveries.
The objective of ECNP is to serve the public good by stimulating high-quality experimental and clinical research and education in applied and translational neuroscience. It seeks to do this by:

- Co-ordinating and promoting scientific activities and consistently high-quality standards between countries in Europe.
- Bringing together all those involved in or interested in the scientific study of applied and translational neuroscience by arranging scientific meetings, seminars, and study groups.
- Providing guidance and information to the public on matters relevant to the field.
- Providing a format for the co-ordination and for development of common standards in Europe.

To fulfil this aim ECNP organises, amongst others, yearly the ECNP Congress that comprises of 6 plenary lectures, 21 symposia, 7 educational update sessions and 7 alternative format sessions. The annual meeting attracts around 5,000 psychiatrists, neuroscientists, neurologists and psychologists from around the world and is considered to be the largest congress on applied and translational neuroscience.

ECNP organises seminars, as the one you have been invited to, in areas of Europe where there are less opportunities for psychiatrists to participate in international meetings. Interaction is the keyword at these meetings and they have proved very successful both for the participants and for the experts. During the seminar we discuss clinical and research issues that the local organisers feel are needed to be covered and using these topics as a model for teaching how to ask a research question and how to plan an effective study. Leading ECNP experts that are also talented speakers will facilitate mutual discussion in small groups allowing you to present your abstract and get feedback from your colleagues and local mentors.

So far, ECNP has organised ECNP Seminars in Poland, Estonia, Turkey, Bulgaria, Slovak Republic, Hungary, Czech Republic, Moldova, Romania, Greece, Latvia, Macedonia, Armenia, Georgia, Serbia, Lithuania and recently in Ukraine, Cyprus and the Russian Federation. In some countries we have organised an ECNP Seminar more than once.

ECNP also supports on an annual basis participation of 100 junior scientists and researchers in an intensive three-day Workshop in Nice. Other educational activities of ECNP include the journal *European Neuropsychopharmacology* that promotes scientific knowledge along with publishing consensus statements. In addition, since 2009 ECNP organises a summer school of neuropsychopharmacology in Oxford and since 2012 a school of child and adolescent neuropsychopharmacology in Venice. Since 2015 a Workshop on Clinical Research Methods takes place yearly in Barcelona, Spain.

ECNP will also continue the successful ECNP Research Internships. A selected group of senior researchers will offer a short two-week exploratory experience in their institutions. The hosting scientist is encouraged to establish a long-term relationship with the applicant and teach a basic translational research method that the participant can use at home when he/she returns.

Please see the ECNP website (www.ecnp.eu) where you can find information about all the above initiatives and additional information and look for the activity that fits you.

I hope you have a fruitful and inspiring meeting in Saint Petersburg!

Gil Zalsman
Chair ECNP Educational Committee

PROGRAMME

FRIDAY 16 NOVEMBER 2018
Arrival of participants and experts

17.00 Registration
19.00 Welcome and dinner

SATURDAY 17 NOVEMBER 2018

08.00 – 09.00 Registration
09.00 – 09.15 What is ECNP?
Introductions to the programme
Speaker: Joseph Zohar

09.15 – 10.00 Introduction to research methods: How to phrase a research question, basic statistics reminder and design
Speaker: Joseph Zohar

10.00 – 10.45 Why deep brain stimulation is deeply stimulating the mind
Speaker: Damiaan Denys

10.45 – 11.30 Coffee break

11.30 – 12.15 Schizophrenia research as a model for research plan and design
Speaker: Andreas Meyer-Lindenberg

12.15 – 12.30 How to prepare a scientific presentation
Speaker: Joseph Zohar

12.30 – 13.30 Lunch

Presentation participants in 3 groups in 3 parallel workshops			
Round 1 13.30 – 15.00	Joseph Zohar and Elena Blokhina	Damiaan Denys and Elena Verbitskaya	Andreas Meyer- Lindenberg and Ilya Sukhanov
	Group 1:	**Group 2:**	**Group 3:**
	Abdullina Aliya	Kalinin Ilya	Paramonov Andrey
	Arefeva Anna	Kalinina Anna	Ptukha Maria
	Ashenbrenner Yulia	Kasyanov Evgeny	Rukavishnikov Grigory
	Bereza Zhanna	Khalimanov Mikhail	Savchenko Artem
	Beridze Renat	Kiyan Kseniya	Severina Yulia
	Bochkov Pavel	Klepikov Dmitry	Shaposhnikov Kirill
	Bortnikov Nikita	Kondrateva Rimma	Sorokin Mikhail

	Chumakov Egor Dmytrenko Dariia Dorofeev Evgeny Dorotenko Artem Gorbunov Alexander Gorev Kirill Gruzdeva Darya	Kutepova Inga Lapshin Mikhail Makeenko Vladimir Mamedova Galina Miroshnikov Michael Moscaleva Polina Nosova Eugenia	Sukhanova Anna Sysoev Yuriy Tolmachev Mikhail Trachuk Pavel Tur Margarita Vaganova Iuliana Zhilyaeva Tatiana	

15.00 – 15.15 Coffee break

15.15 – 15.45 Panel discussion: How to prepare a clinical research project and how to publish it
Chair: Joseph Zohar
Panel members: Damiaan Denys & Andreas Meyer-Lindenberg

15.45 – 15.55 Group photo

16:00 – 21.00 Cultural event - Visit to Faberge Museum (17:00 – 18:00)
21, Fontanka River Embankment
- Group photo
- Dinner in the restaurant Mama Roma (18:00 – 20:00),
3/35, Karavannaya street

SUNDAY 18 NOVEMBER 2018

Presentations participants in 3 groups in 3 parallel workshops			
Round 2 08.30 – 10.00	Andreas Meyer-Lindenberg and Ilya Sukhanov **Group 1**	Joseph Zohar and Elena Blokhina **Group 2**	Damiaan Denys and Elena Verbitskaya **Group 3**
10.00 – 10.30 Coffee Break			
Round 3 10.30 – 12.00	Damiaan Denys and Elena Verbitskaya **Group 1**	Andreas Meyer-Lindenberg and Ilya Sukhanov **Group 2**	Joseph Zohar and Elena Blokhina **Group 3**
12.00 – 14.00 Lunch and preparation for plenary session			
Plenary Session 14.00 – 15.00	14.00 – 14.20	**Group 1** Presentation	
	14.20 – 14.40	**Group 2** Presentation	
	14.40 – 15.00	**Group 3** Presentation	

15.00 – 15.30 Coffee break and faculty selection of Seminar Award winners
Completion of feedback forms

15.30 – 16.00 Award ceremony, concluding remark and thanks
Joseph Zohar and Edwin Zvartau

FACULTY

JOSEPH ZOHAR (SEMINAR LEADER)

Dr. Zohar is a professor of Psychiatry at the Sackler Faculty of Medicine, Tel Aviv University. Dr. Zohar is a past-President of the European College of Neuropsychopharmacology (ECNP). He is also chair of the Israeli consortium on PTSD, and chair of the International College of Obsessive-Compulsive Spectrum Disorders (ICOCS). Dr. Zohar is a board member for the International Master in Affective Neuroscience, a visiting Professor at the University of Maastricht (The Nederlands).

DAMIAAN DENYS

Damiaan Denys is professor at the University of Amsterdam (UVA), chair of the department of psychiatry at the Academic Medical Center in Amsterdam (AMC), and associated with the Netherlands Institute for Neuroscience (NIN).
Denys conducts research into anxiety and impulsive-compulsive disorders. His scientific research is characterized by a translational approach making use of psychiatry, philosophy and neuroscience. A particular focus of his research is the development of deep brain stimulation (DBS) for psychiatric disorders.
Denys studied Philosophy and Medicine at the KU Leuven (Belgium) and obtained his doctorate cum laude from Utrecht University (Netherlands) with a dissertation entitled on certainty: studies in obsessive compulsive disorder.

ANDREAS MEYER-LINDENBERG

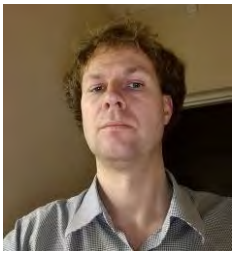
Prof. Meyer-Lindenberg is Director of the Central Institute of Mental Health, as well as the Medical Director of the Department of Psychiatry and Psychotherapy at the Institute, based in Mannheim, Germany, and Professor and Chairman of Psychiatry and Psychotherapy at the University of Heidelberg in Heidelberg, Germany. He is board certified in psychiatry, psychotherapy, and neurology. Before coming to Mannheim in 2007, he spent ten years as a scientist at the National Institutes of Mental Health, Bethesda, USA. His research interests focus on the development of novel treatments for severe psychiatric disorders through an application of multimodal neuroimaging, genetics and enviromics to characterize brain circuits underlying the risk for mental illness. Prof. Meyer-Lindenberg is the author of more than 300 peer-reviewed articles and book chapters and currently named as one of the most highly cited scientists in the world (www.isihighlycited.com) He is the Editor-in-Chief of the European Journal of Neuropsychopharmacology.

VERBITSKAYA ELENA

Verbitskaya Elena, PhD, Department of Clinical Pharmacology and Evidence Based Medicine, First Pavlov St. Petersburg State Medical University, Russia.
Graduated from the Leningrad Mechanical Institute, Dr. Elena Verbitskaya is an Associate Professor at Department of Clinical Pharmacology and Evidence Based Medicine and head of the Department of Pharmacoepidemiology and biostatistics, First Pavlov St. Petersburg State Medical University (Russia). She

provides an education of PhD medical students and residence in the field of Evidence Based Medicine, Clinical trials methodology and biostatistics, also provides statistical support and consulting services for clinical trials.

SUKHANOV ILYA



Dr Sukhanov is Head of the Laboratory of Behavioural Pharmacology at First Pavlov State Medical University of Saint Petersburg. Following obtaining doctorate at the First Pavlov State Medical University he spent five years at Instituto Italiano di Tecnologia (Genova, Italia) under supervision of Prof. Raul R. Gainetdinov. Dr Sukhanov is specialized in preclinical studies in laboratory animals. His scientific interests are cognitive and impulsive control and pharmacology of trace amine associated receptors.

ELENA BLOKHINA

Dr. Blokhina is a leading research scientist and deputy director of Valdman Institute of Pharmacology First Pavlov State Medical University of Saint Petersburg, Russia. She is a psychiatrist with a background in addiction psychiatry. She has received training in a range of psychiatric issues pertaining to drug addiction and research. Before coming to clinical practice, she spent eight years as a scientist at the preclinical laboratory evaluating effects of psychotropic substances in rodents. Her research efforts focus on the improvement of lives of patients suffering from alcohol, drug addiction and HIV.

PRESENTATIONS

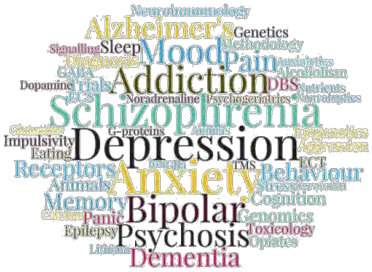
SATURDAY 17 NOVEMBER 2018

JOSEPH ZOHAR (SEMINAR LEADER)
INTRODUCTIONS TO THE PROGRAMME

ECNP

1. What is ECNP?

- Independent pan-European scientific association
- For the science and treatment of disorders of the brain



To advance the science of the brain, promote better treatment and enhance brain health

www.ecnp.eu

ECNP

2. ECNP for Junior Scientists

ECNP School

- **Two Schools**

  Week-long programme of intensive training for 50 young psychiatrists:

  – ECNP School of Neuropsychopharmacology (Oxford, UK)

  – ECNP School of Child and Adolescent Neuropsychopharmacology (Venice, Italy)

- **Two Workshops**

  Workshop

  Three-day interactive workshop for 100 junior scientists

  – ECNP Workshop for Junior Scientists in Europe (Nice, France)

  Three-day interactive workshop for 50 junior scientists to improve research skills

  – ECNP Workshop on Clinical Research Methods (Barcelona, Spain)

No registration fees, accommodation provided. Support for travel available.

www.ecnp.eu

2. ECNP for Junior Scientists *(continued)*

- **ECNP Research Internship**

  Short-term research internship opportunities for junior researchers, across the spectrum of applied and translational neuroscience

  – 15 places available per year for a two-week visit

- **ECNP Seminars**

  Two-day interactive training course for future leading scientists in neuropsychopharmacology in European countries whose researchers and practitioners have limited opportunities to attend international meetings.

  – 4 Seminars per year, max. 50 participants each



3. ECNP Congress

Europe's largest meeting on applied and translational neuroscience

The Congress brings together a vibrant group of psychiatrists, neuroscientists, neurologists and psychologists from around the world to discuss the latest developments in the science and treatment of brain disorders.

- Free registration for junior scientist poster presenters
- Funding available for junior scientists:
  - 40 ECNP Travel Awards (€ 500 each)
  - 40 ECNP CDE Grants (€500 each)
  - 8 ECNP Seminar Awards (€ 1,000 per Seminar Award Winner)

4. Neuroscience-based Nomenclature

- International collaboration to reform the nomenclature of psychotropic drugs
- 20,000 downloads

NbN NEUROSCIENCE BASED NOMENCLATURE

NbN NEUROSCIENCE based NOMENCLATURE Child & Adolescent

Google Play App Store

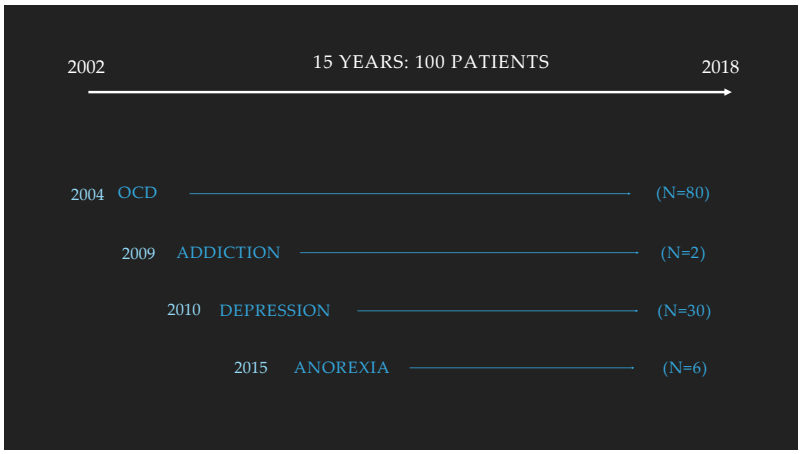
CINP IUPHAR

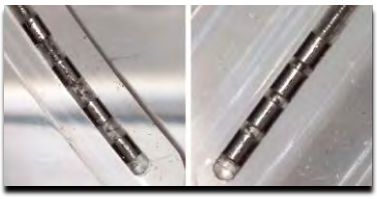
5. What are going to do here?

JOSEPH ZOHAR (SEMINAR LEADER)
NBN NEUROSCIENCE BASED NOMENCLATURE

DAMIAAN DENYS

WHY DEEP BRAIN STIMULATION IS DEEPLY STIMULATING THE MIND





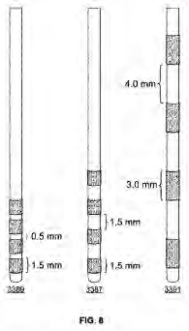
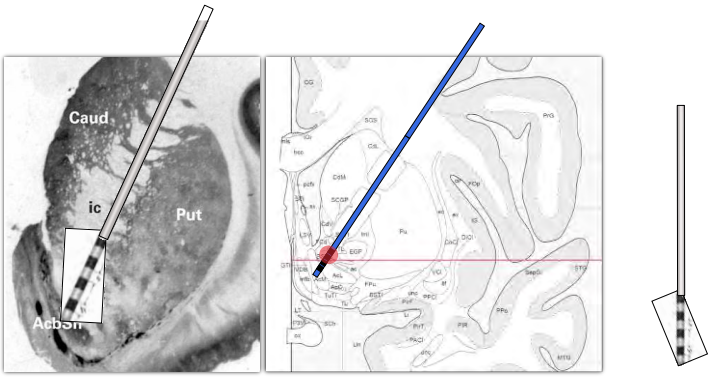
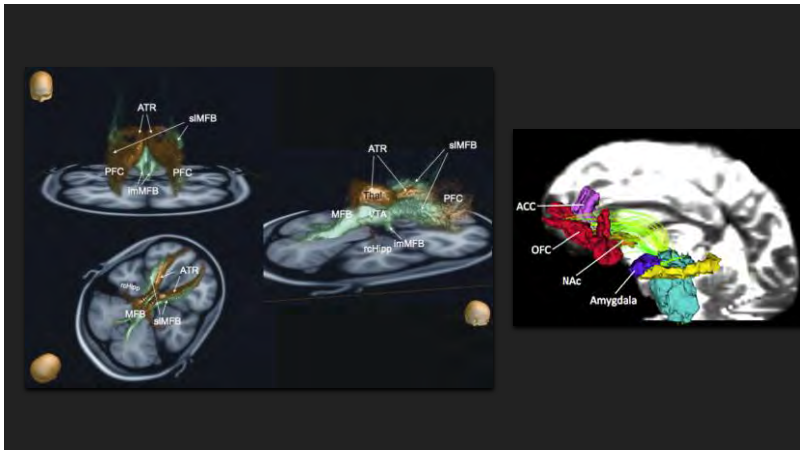
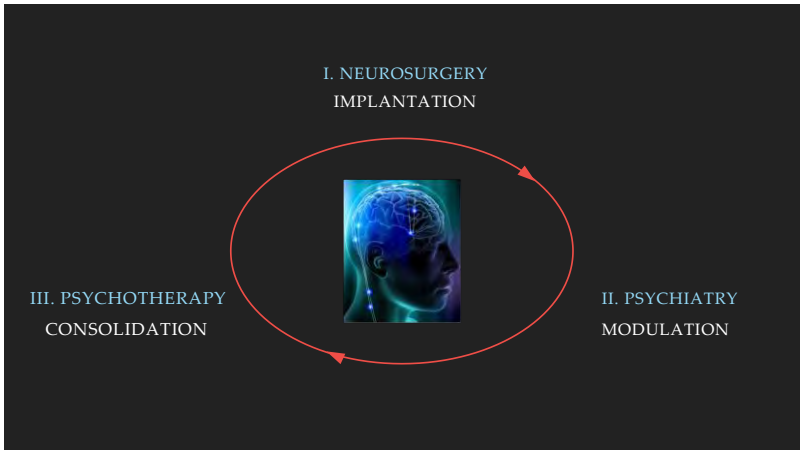


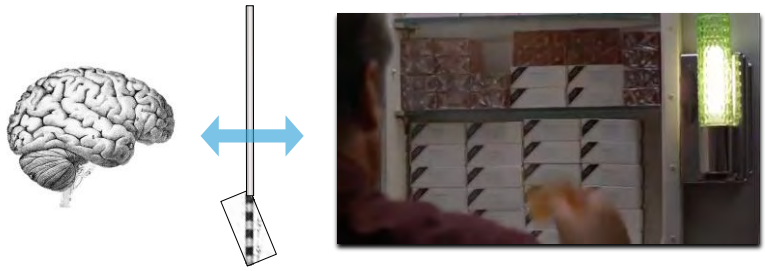
FIG. 8

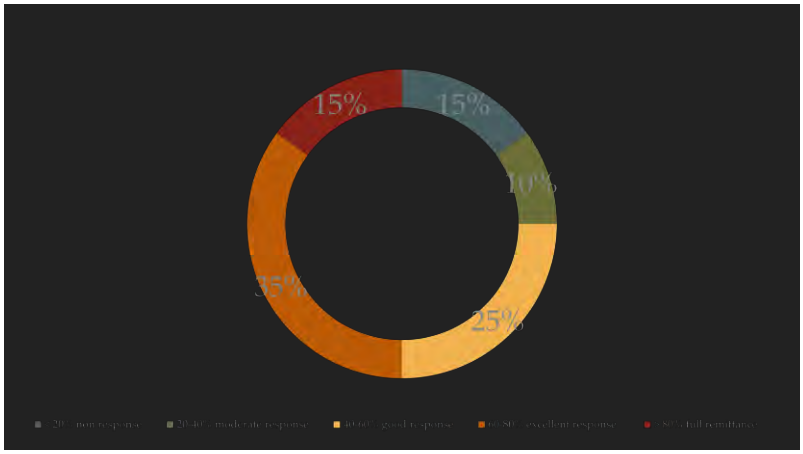


7 MM LATERAL TO THE MIDLINE,
3 MM ANTERIOR TO THE ANTERIOR BORDER OF THE ANTERIOR COMMISSURE
4 MM INFERIOR TO THE INTERCOMMISSURAL LINE









MRS. D

COMPULSIV
E

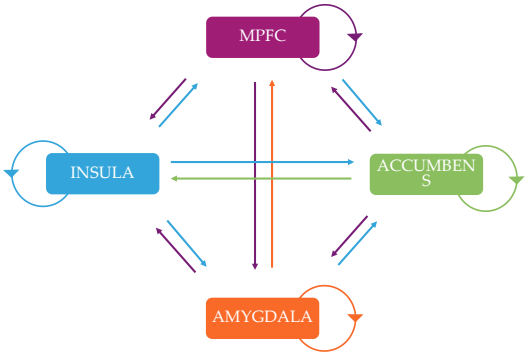
DBS OFF

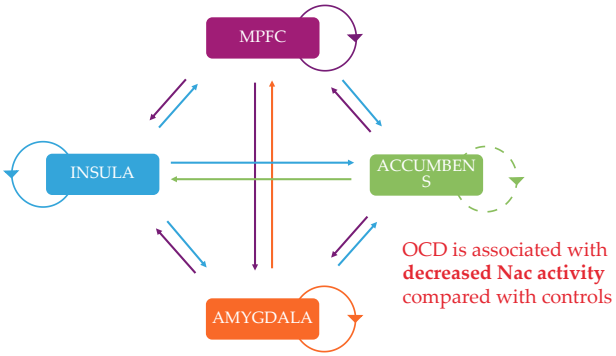
MRS. D

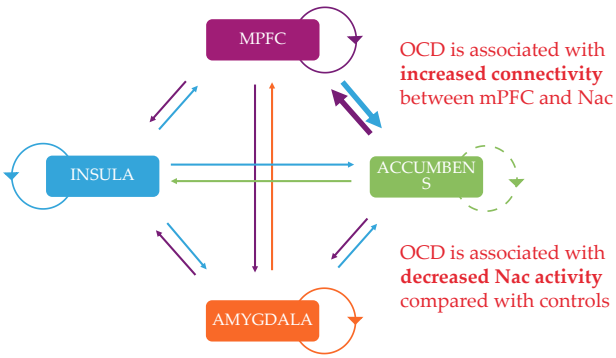
VOLUNTAR
Y

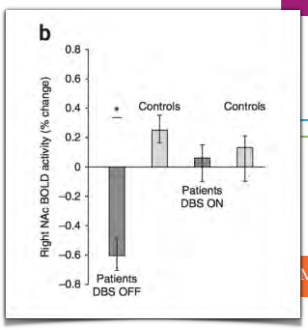
DBS ON

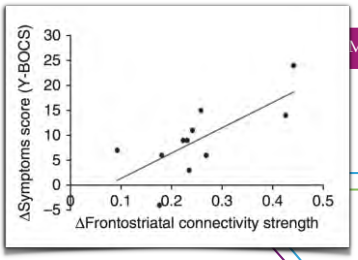
TRUST VERSUS CONTROL



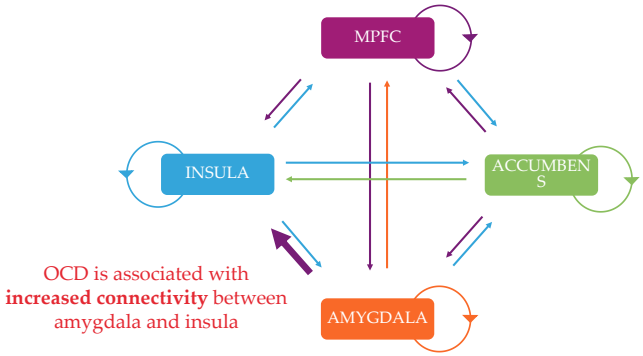


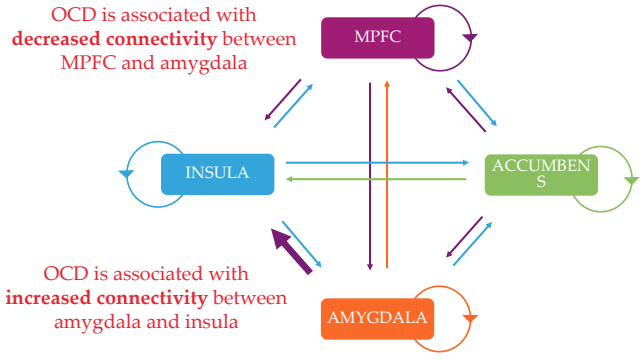


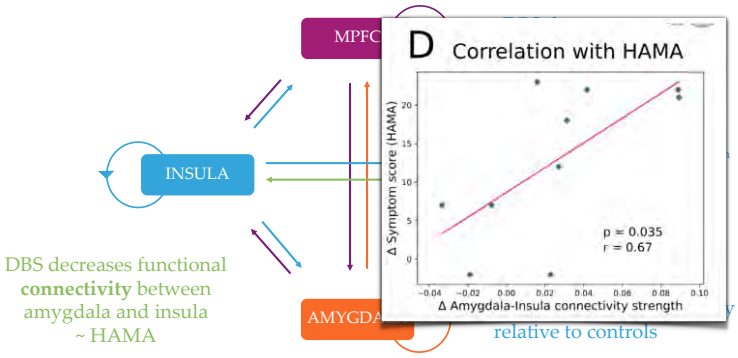

b
Right NAc BOLD activity (% change)
0.8
0.6
0.4
0.2
0
−0.2
−0.4
−0.6
−0.8
Controls
Controls
Patients DBS ON
Patients DBS OFF

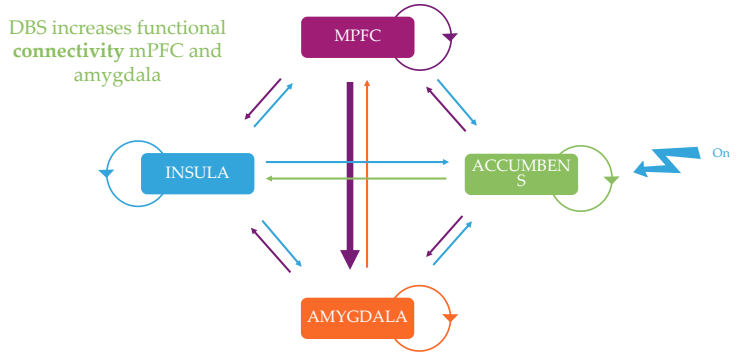

ΔSymptoms score (Y-BOCS)
30
25
20
15
10
5
0
−5
0
0.1
0.2
0.3
0.4
0.5
ΔFrontostriatal connectivity strength

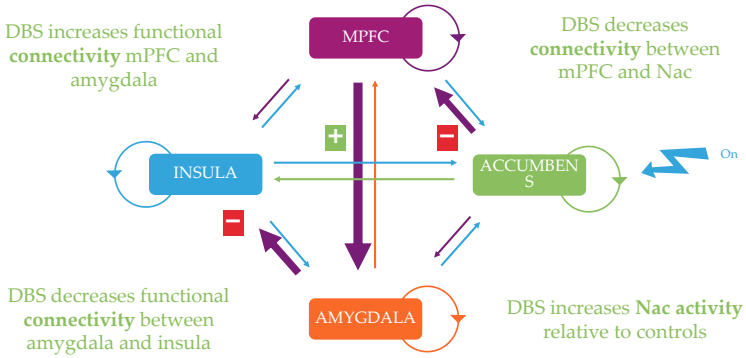
MPFC
ACCUMBENS
On
AMYGDALA
DBS **increases Nac activity** relative to controls
MPFC
ACCUMBENS
On
AMYGDALA
DBS decreases **functional connectivity** between mPFC and Nac ~ YBOCS
DBS increases **Nac** activity relative to controls

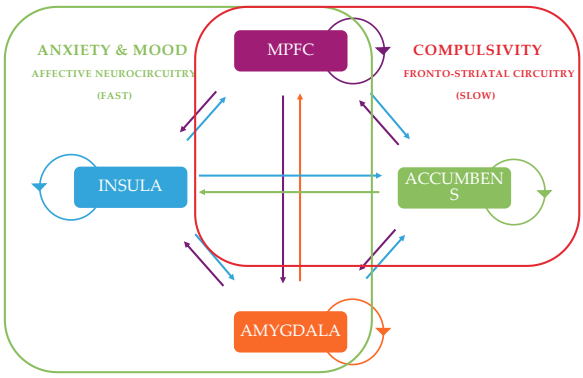

MPFC
INSULA
ACCUMBENS
AMYGDALA
OCD is associated with **increased connectivity** between amygdala and insula


OCD is associated with **decreased connectivity** between MPFC and amygdala
MPFC
INSULA
ACCUMBENS
OCD is associated with **increased connectivity** between amygdala and insula
AMYGDALA

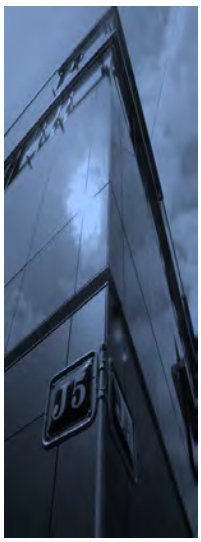

MPFC
INSULA
AMYGDA
D
Correlation with HAMA
Δ Symptom score (HAMA)
Δ Amygdala-Insula connectivity strength
p = 0.035
r = 0.67
DBS decreases functional **connectivity** between amygdala and insula ~ HAMA
relative to controls


DBS increases functional **connectivity** mPFC and amygdala
MPFC
INSULA
ACCUMBENS
On
AMYGDALA


DBS increases functional **connectivity** mPFC and amygdala
MPFC
DBS decreases **connectivity** between mPFC and Nac
INSULA
ACCUMBENS
On
DBS decreases functional **connectivity** between amygdala and insula
AMYGDALA
DBS increases **Nac activity** relative to controls


ANXIETY & MOOD
AFFECTIVE NEUROCIRCUITRY
(FAST)
MPFC
COMPULSIVITY
FRONTO-STRIATAL CIRCUITRY
(SLOW)
INSULA
ACCUMBENS
AMYGDALA

ANDREAS MEYER-LINDENBERG
SCHIZOPHRENIA RESEARCH AS A MODEL FOR RESEARCH PLAN AND DESIGN



ECNP Seminar, St Petersburg, 11-16-2019

Schizophrenia research as a model for research plan and design

Andreas Meyer-Lindenberg
Central Institute of Mental Health, Mannheim

Current treatment and recovery

PRIMER

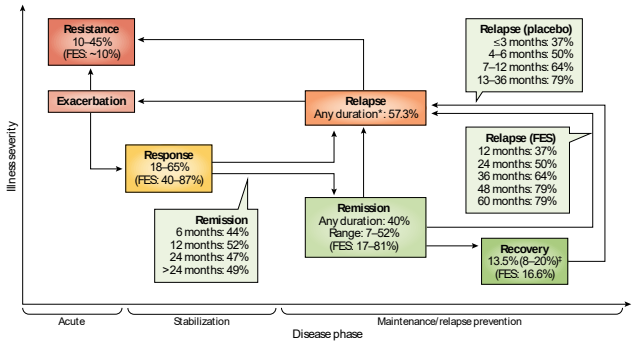


Figure 7 | **Treatment phases and outcomes in schizophrenia.** Percentages denote the proportion of patients with schizophrenia at that particular stage of the disease. FES, first-episode psychosis. *In antipsychotic discontinuation studies. ‡Median (interquartile range). Figure from ref. 173. Figure modified from *Dialogues in Clinical Neuroscience* with the permission of the publisher (AICH-Servier Research Group, Suresnes, France). Carbon, M. & Correll, C. U. Clinical

Kahn et al. Nat Rev Disease Primers 2015

Excess mortality of schizophrenia

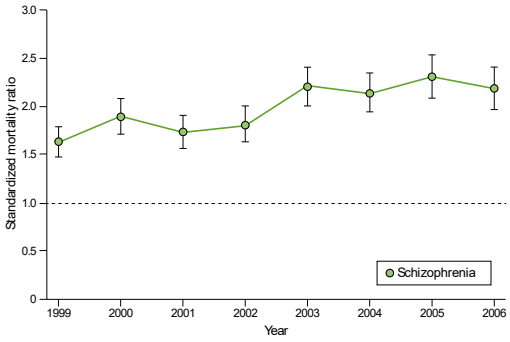
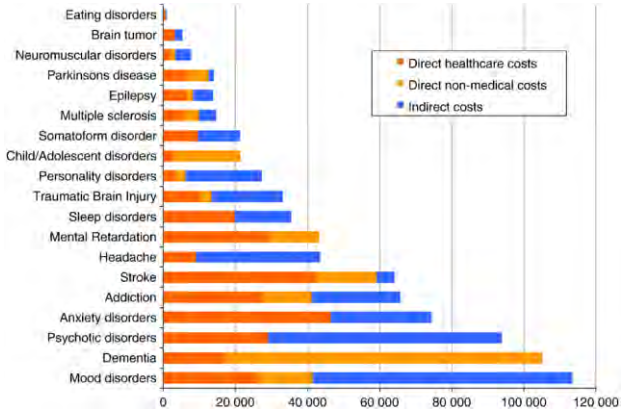


Figure 1 | **Historical mortality rates for people with schizophrenia compared with the general population.** The disparity in mortality rates between people with schizophrenia and the general population in England increased between 1999 and 2006.

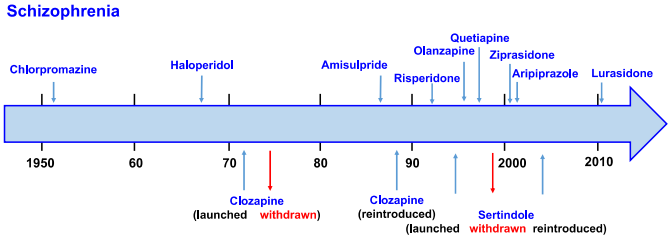
Kahn et al. Nat Rev Disease Primers 2015

Estimated cost of brain disorders in Europe 2010
(€ PPP Mio)

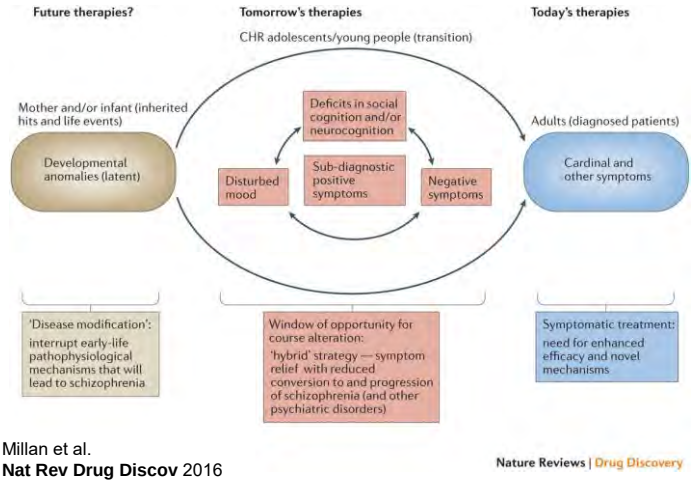


Gustavsson et al. **European Neuropsychopharmacol** 2011

The past-present of pharmacotherapy

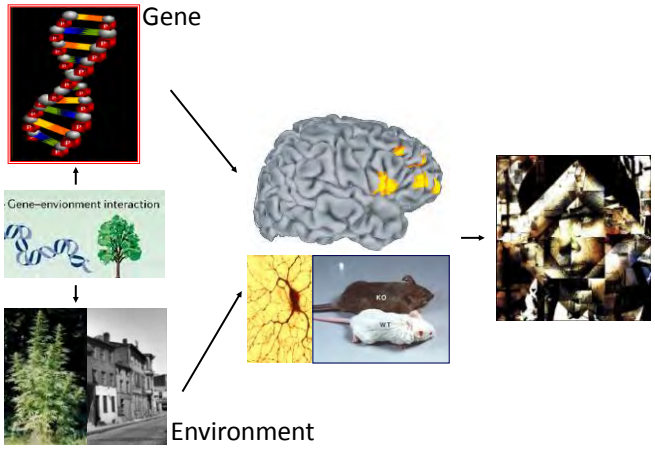


Millan et al. **Eur Neuropsychopharmacol** 2015

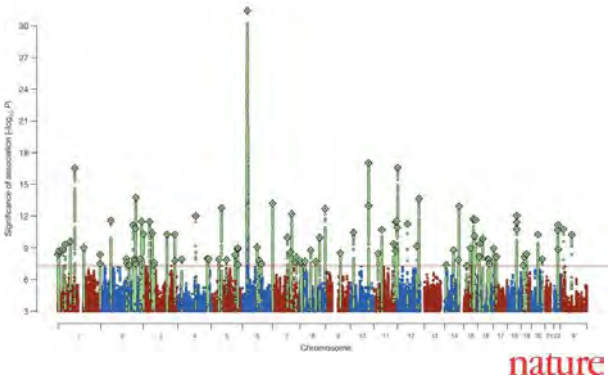


Millan et al.
Nat Rev Drug Discov 2016

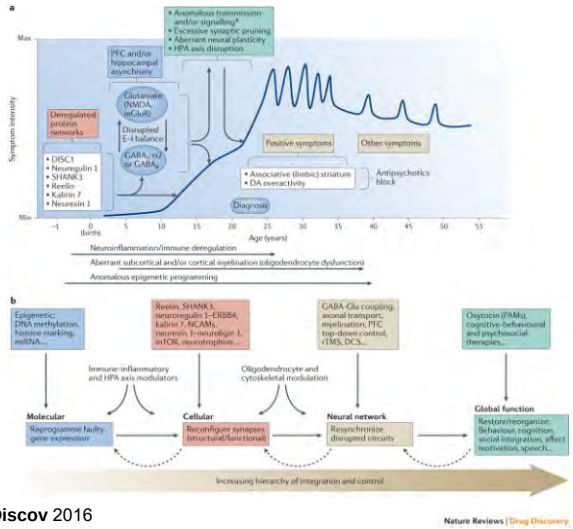
Analyzing causal risk factors



Genome-wide signficant associations with schizophrenia

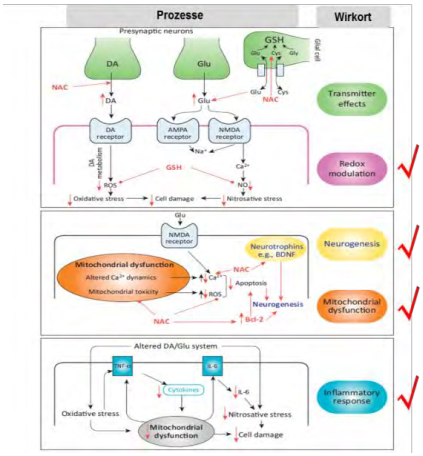


Ripke et al. **Nature** 2014



Millan et al.
Nat Rev Drug Discov 2016

Neuroprotection: N-Acetyl-Cystein (NAC)



Berk M, et al., Trends in Pharmacological Sciences, 2013

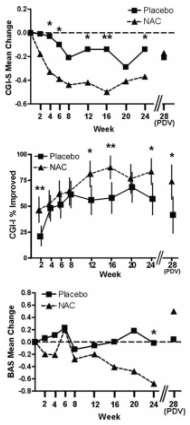
Neuron
Article

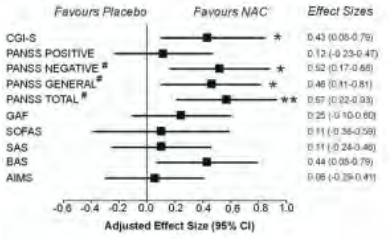
CellPress

Juvenile Antioxidant Treatment Prevents Adult Deficits in a Developmental Model of Schizophrenia

Jan-Harry Cabungcal,[1,7] Danielle S. Counotte,[5,7] Eastman M. Lewis,[2,3,7] Hugo A. Tejeda,[2,3] Patrick Piantadosi,[3] Cameron Pollock,[3] Gwendolyn G. Calhoon,[2,3] Elyse M. Sullivan,[2,3] Echo Presgraves,[3] Jonathan Kil,[4] L. Elliot Hong,[2,5,6] Michel Cuenod,[1] Kim Q. Do,[1,*] and Patricio O'Donnell[2,3,5,*]
[1]Centre for Psychiatric Neuroscience, Department of Psychiatry, Lausanne University Hospital, Lausanne, Switzerland
[2]Program in Neuroscience
[3]Department of Anatomy and Neurobiology
University of Maryland School of Medicine, Baltimore, MD, USA
[4]Sound Pharmaceuticals, Inc, Research and Development, Seattle, WA, USA
[5]Department of Psychiatry, University of Maryland School of Medicine, Baltimore, MD, USA
[6]Maryland Psychiatric Research Center, Baltimore, MD, USA
[7]Co-first Authors
*Correspondence: kim.do@chuv.ch (K.Q.D.), patricio.odonnell@pfizer.com (P.O.)
http://dx.doi.org/10.1016/j.neuron.2014.07.028

NAC & Schizophrenia





Augmentation mit NAC

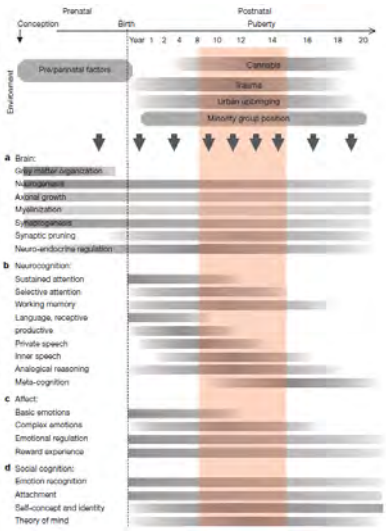
1g NAC oral, 2x/d

Dauer 24 Wochen

n=140 randomisiert, 84 beendeten Therapie

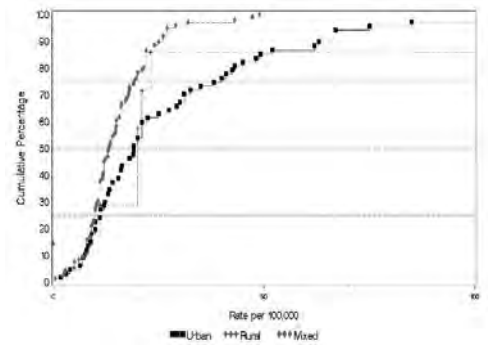
Berk et al., Biol Psychiatry 2008

Environmental risk factors

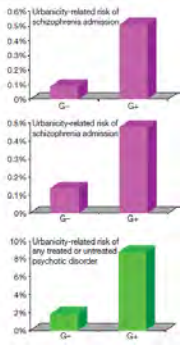


Van Os et al., **Nature** 2010

Urbanicity and risk for schizophrenia

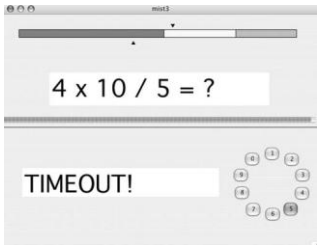


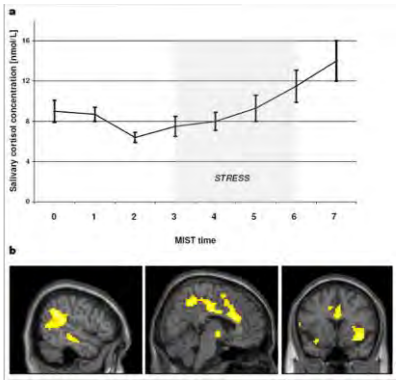
McGrath et al. **BMC Medicine** 2004



van Os et al. **Nature** 2010

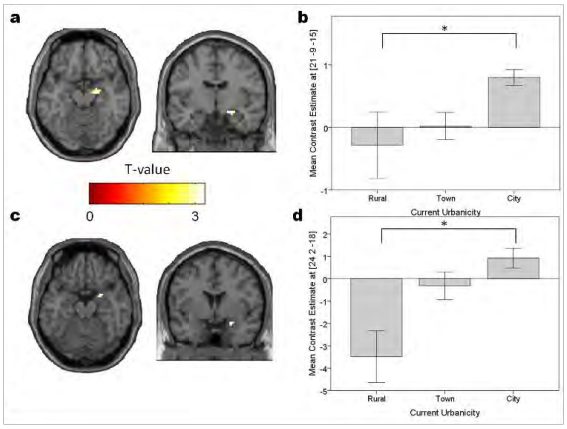
Imaging Stress Task





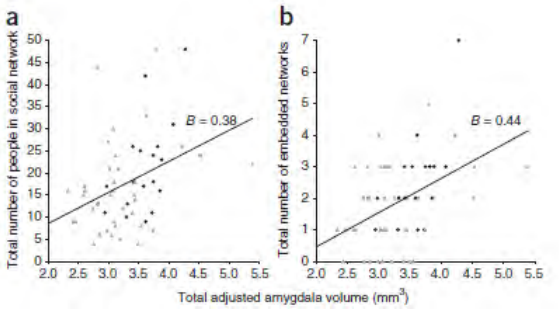
Lederbogen*, Kirsch*, Haddad* et al., **Nature** 2011

City living and amygdala activation



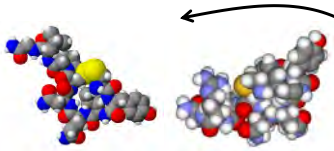
Lederbogen*, Kirsch*, Haddad* et al., **Nature** 2011

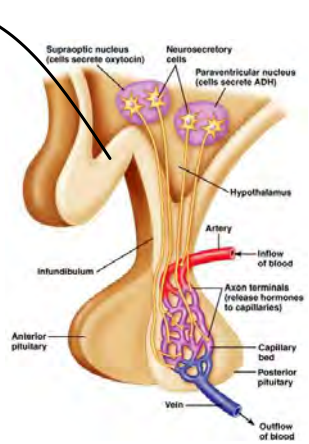
Social network: structural effects



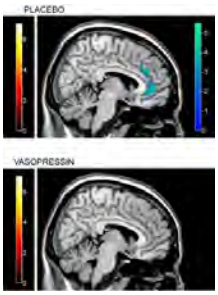
Bickart et al., **Nat Neurosci** 2010

Prosocial neuropeptides

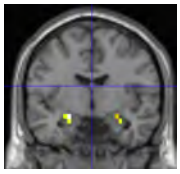




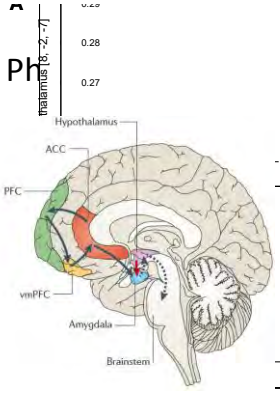
- Molecular mediators of prosocial interactions in all mammals (bonding, trust)
- Reach brain given nasally in humans
- Potential for specific synergies with psychotherapy



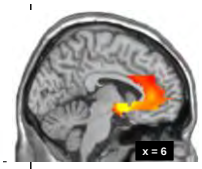
Zink et al., **J Neurosci** 2010



Meyer-Lindenberg et al., **Mol Psychiatry** 2008



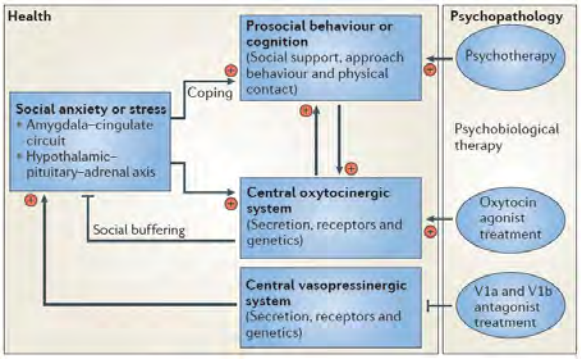
Meyer-Lindenberg et al., **Nat Rev Neurosci** 2011



Tost et al. **PNAS** 2010

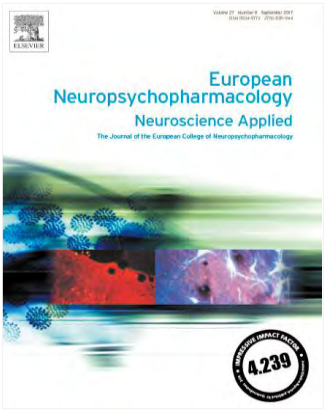
Kirsch et al.
J Neurosci 2005

Neuropsychotherapy: intervention points



Meyer-Lindenberg et al. **Nat Rev Neurosci** 2011

Publish your findings in the ECNP journal



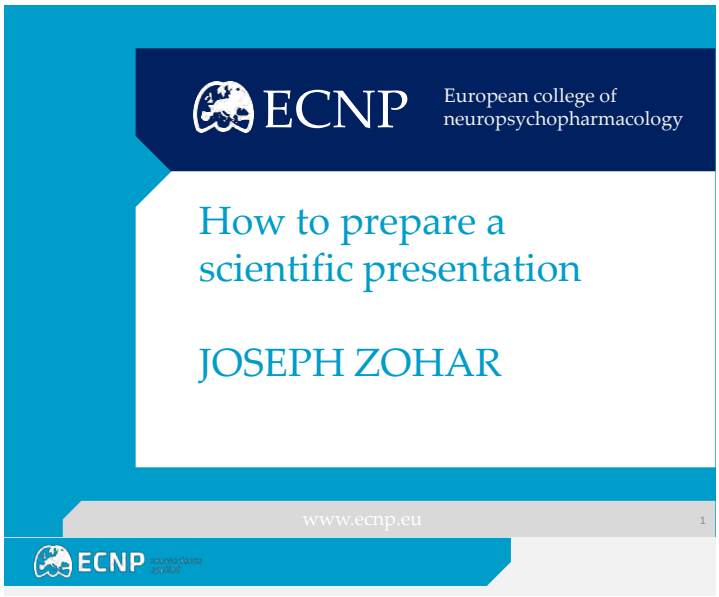
European Neuropsychopharmacology

Neuroscience Applied

Thanks: ESPRIT consortium
IMAGEMEND consortium

- Tost, Schwarz, Grimm, Plichta, Risterucci, Pezawas, Lederbogen, Haddad, Kirsch, Heinrichs, Walter, Schenker, Spedding, Francois, Sartorius, Weber-Fahr, Kapur, Stensbol, Spooren, Murphy, Steffansson, Bähner, Demanuele, Schneider, Didriksen
- Department of Psychiatry, WG Systems Neuroscience in Psychiatry

JOSEPH ZOHAR (SEMINAR LEADER)
HOW TO PREPARE A SCIENTIFIC PRESENTATION



Learning

- Definition of *any* kind of learning?

Learning

- Definition of *any* kind of learning= a steady change in behavior as a result of an experience
- The change has to happen in your audience
- Effective learning is an active process

Before you start

- Who is your audience?
- What is your desired outcome?
- How much time do you have?
- What are the key messages?
- Is your PP presentation working?

Common Causes of Ineffective Presentations

- Failure to prepare the talk
- Cut and paste from your paper
- Gaps in logic
- Poor delivery (speaker)
- Poor time planning
- Too many slides

Organising a Presentation

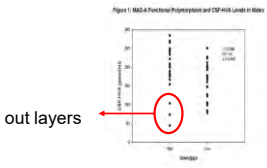
I. Outline
II. Problem and background
III. Design and methods
IV. Major findings - the heart of your talk
V. Conclusion, limitations and recommendations

Introduction

- Context
- Study question
- Relevant knowledge on issue

Major Findings

- Text and or table/graph
- One slide for each
- Message should be clear
- Figures are the best



Conclusion and Recommendations

- What have we learnt?
- Key points
- Clinical Implications
- Clear closure (pause, high note, thanks)



Making Slides

- Main points only
- One idea per slide
- Few words (5-10 per line)
- Strong statements: active voice
- 1 slide per 1 minute

Making Slides *(Continued)*

- Type size should be 24 points or larger:

18 point

20 point

24 point

28 point

36 point

- References can be in 14 point font

Making Slides *(Continued)*

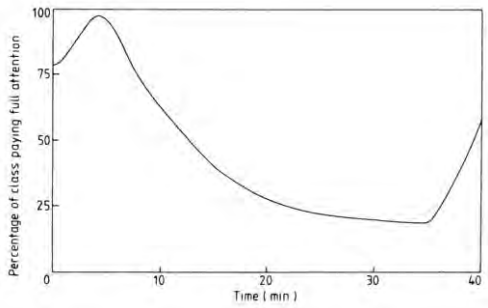
- Best contrasts

Yellow on Blue

or

Black on White

Audience Attention Curve



The TED Style

- Move when possible (unexpected tract)
- Contact
- Time yourself precisely
- Change tones
- Use humor when appropriate
- Enjoy….

The Learning Rule

"Tell me and I will forget, show me and I will remember, involve me and I will understand"

LIST OF PARTICIPANTS

Last name	First name	City	Country
Abdullina	Aliya	Moscow	Russian Federation
Arefeva	Anna	St Petersburg	Russian Federation
Ashenbrenner	Yulia	St Petersburg	Russian Federation
Bereza	Zhanna	St. Petersburg	Russian Federation
Beridze	Renat	Gomel	Belarus
Bochkov	Pavel	Moscow	Russian Federation
Bortnikov	Nikita	St Petersburg	Russian Federation
Chumakov	Egor	St Petersburg	Russian Federation
Dmytrenko	Dariia	Feodosia	Russian Federation
Dorofeev	Evgeny	Nizhny Novgorod	Russian Federation
Dorotenko	Artem	St Petersburg	Russian Federation
Gorbunov	Alexander	Moscow	Russian Federation
Gorev	Kirill	Nizhny Novgorod	Russian Federation
Gruzdeva (Ponomareva)	Darya	St Petersburg	Russian Federation
Kalinin	Ilya	Moscow	Russian Federation
Kalinina	Anna	Moscow	Russian Federation
Kasyanov	Evgeny	St Petersburg	Russian Federation
Khalimanov	Mikhail	Moscow	Russian Federation
Kiyan	Kseniya	Moscow	Russian Federation
Klepikov	Dmitry	Almaty	Kazakhstan
Kondrateva	Rimma	Moscow	Russian Federation
Kutepova	Inga	Moscow	Russian Federation
Lapshin	Mikhail	Moscow	Russian Federation
Makeenko	Vladimir	St Petersburg	Russian Federation
Mamedova	Galina	Moscow	Russian Federation
Miroshnikov	Michael	St Petersburg	Russian Federation
Moscaleva	Polina	St. Petersburg	Russian Federation
Nosova	Eugenia	Kaluga	Russian Federation
Paramonov	Andrey	Talagi village, Arkhangelsk region	Russian Federation
Ptukha	Maria	St Petersburg	Russian Federation
Rukavishnikov	Grigory	St Petersburg	Russian Federation
Savchenko	Artem	St Petersburg	Russian Federation
Severina	Yulia	Moscow	Russian Federation
Shaposhnikov	Kirill	Tomsk	Russian Federation
Sorokin	Mikhail	St Petersburg	Russian Federation
Sukhanova	Anna	Nizhny Novgorod	Russian Federation
Sysoev	Yuriy	St Petersburg	Russian Federation
Tolmachev	Mikhail	St Petersburg	Russian Federation
Trachuk	Pavel	St Petersburg	Russian Federation

Tur	Margarita	St Petersburg	Russian Federation
Vaganova (Samulyzhko)	Iuliana	St Petersburg	Russian Federation
Zhilyaeva	Tatiana	Nizhny Novgorod	Russian Federation

ABSTRACTS OF PARTICIPANTS

Aliya Abdullina
Antidepressant-like activity of Cyclo-prolylglycine

Cycloprolylglycine (CPG) was constructed as topological analog of classical nootropic piracetam, and appeared to have a wider spectrum of biological activities, such as antiamnesic, anxiolytic, antihypoxic, and neuroprotective properties. We aimed to find out and assess its antidepressant-like activity. For this purpose we tested CPG on Balb/c, C57Bl/6, and ASC mice on depression-related behavioral tests, attempted to determine mechanism of CPG action by radioligand assay, and investigated its pharmacokinetics. In the nearest plans – research of CPG's effects on genes expression (Tph-2, 5HT2A, 5HT1A, BDNF, SERT, Arc and CREB).

ArefevaAnna
Behavioral phenotyping of SHR and WKY in the 2-Choice Serial Reaction Time Task

The Wistar-Kyoto (WKY) and spontaneously hypertensive rats (SHR) are well-known model animals. In spite the rats have been studied for years, behavioral differences between the strains are still controversial. This work was aimed to compare attention, impulsivity and compulsivity of SHR and WKY in the two-choice serial reaction time task. The experiment was conducted in the set of 6 standard operant boxes for rats. The results revealed that WKY performed more perseverative responses (indicated compulsivity of rats) than SHR. These data support the previously proposed view that WKY are the animal model of OCD.

Ashenbrenner Yulia
Residual symptoms and cognitive impairment in patients with bipolar disorder in remission

Background: Many patients with bipolar disorder (BD) experience residual symptoms (RS) and cognitive impairment in remission. RS are among important sources of disability in patients with BD in remission.
Aims: to assess the relationship between RS and cognitive impairment in patients with BD in remission.
Methods and materials: The sample consisted of 60 adults with BD in remission, age from 18 to 45. We provided a single examination of a patient including the collection of anamnestic data, a clinical interview with The Brief Neuropsychological Cognitive Examination (BNCE).
Results: RS were observed in 67% of patients. The most frequent RS were sleep disturbances (33.3%; n=20) and transitory affective fluctuations (28.3%; n=17). The BNCE average value in patients with RS was 24.95±1.8 (mild cognitive deficits), and in patients without RS – 27.45±1.05. RS presence was linked with the presence of the cognitive impairment ($R=0.4458$; $p<0.001$).
Conclusions: This study contributes to a better understanding of the mental state in patients with BD in remission, choosing the best treatment tactics.

Bereza Zhanna
Diagnostics and prognostic assessment of the first psychotic episode comorbid with the cannabis abuse

Background: The number of psychoses among cannabis and synthetic cannabinoid users is significantly increasing.
Objective: To examine the specific clinical features of cannabis-induced psychotic disorder (CIPD) as compared to primary psychotic disorder with concurrent cannabis abuse (PPD + CA)
Material and methods: 17 patients with PPD+ CA and 19 patients SIPD due to cannabis were examined. Clinical, experimental, psychological (ASI-5, PANSS, MADRS, SCL-90, DAI-10) and statistical methods were used.
Results: The duration of systematic use of cannabinoids before the manifestation of psychosis and the daily dose in patients of PPD+ CA were higher. According to anamnesis data patients with PPD+CA had significantly more remissions than the patients with CIPD. Data on the structure of the psychotic episode revealed that the patients of CIPD initially had significantly higher scores on PANSS and most scales of SCL-90, which indicates more significant positive symptomatology compared to the patients with PPD+ CA. The rate of reduction of positive symptoms in patients with SIPD was higher and the duration of hospitalization was shorter. The severity of negative symptoms and the level of depression were higher in patients with PPD+ CA and structural thought disorders were diagnosed more frequently. The structure of the psychotic episode in these patients revealed more non-congruent affective psychotic symptoms.
Conclusion: There are no strictly defined phenomenological and anamnestic differential diagnostic characteristics PPD + SA and SIPD. Genetic analysis is required to establishing diagnosis.

Beridze Renat

Pharmacological and pharmacoeconomic aspects of the treatment of multiple sclerosis in the Republic of Belarus

Now in connection with action stressful and activation of genetic factors in society cases of multiple sclerosis have become frequent. Today a problem in treatment of patients with multiple sclerosis is the absence in the pharmaceutical market of medicines of a preventive row and also the cost of medicines for treatment of this pathology. It has formed a basis for this research. The purposes of work were: to study the reasons, prevalence, features and options of a course of multiple sclerosis, to analyse tactics of treatment of this disease in Republic of Belarus in comparison with the recognized international standards, to estimate a pharmacoeconomic of multiple sclerosis in Republic of Belarus taking into account factor and indirect cost and also to analyse influence of medicines of vitamin D on dynamics of treatment of multiple sclerosis. Material for a research were schemes and tactics of treatment of multiple sclerosis in Republic of Belarus, medicines which are used for knocking over of attacks of multiple sclerosis and their prevention as in Republic of Belarus, and abroad and also the publications containing information on epidemiology and treatment of multiple sclerosis in RB and some other the European countries, placed in the English-speaking resources "U.S. National Library of Medicine" and in a number of Russian-language editions ("Medicine and health care", "The magazine of neurology and psychiatry of S.S. Korsakov", "The medicinal messenger") during 2009-2018. The analysis of a pharmacoeconomic was carried out on the basis of standards of delivery of health care by sick multiple sclerosis to RB, official statistical publications. The standard has division of medical services in functional purpose (diagnostics, treatment and pharmacotherapy).
Results:
1. Proceeding from an indicator of the general incidence of multiple sclerosis in Republic of Belarus (~ 41 case on 100 thousand of the population) and population (~ 10 million people), the value of the general incidence of multiple sclerosis in the country exceeds 4000 cases;
2. Tactics of pharmacotherapy of multiple sclerosis in Republic of Belarus significantly differs from the international standards of therapy, first of all, in respect of prevention of development of aggravations;
3. Now it isn't possible to draw an unambiguous conclusion on communication of vitamin D and risk of developing of multiple sclerosis. The contribution of deficiency of vitamin D to development of

multiple sclerosis, effect of therapy by vitamin D medicines on the course of a disease demand further studying because its therapeutic effect isn't proved. Besides, today there is a large number of data which claim about lack of therapeutic effect of vitamin D and its medicines on the course of multiple sclerosis;
4. Important value is the cost of medicines, high cost of schemes of treatment by preventive means;
5. The general costs of maintaining one patient with multiple sclerosis have made 13 177,7 bel. rub (~ 6300 dollars) in a year. Shares of factor and indirect cost – 7% and 93% respectively. It demonstrates that the main economic burden is the share of indirect expenses;
6. Also it is necessary to pay attention that slightly more than 1% (1,3%) of an economic burden are the share of medicines. In other countries this indicator exceeds 40% that is caused by inclusion of medicines of the different groups changing the course of multiple sclerosis in medical practice. In Republic of Belarus these medicines aren't included in the standard of treatment;
7. Proceeding from the general incidence of multiple sclerosis in Republic of Belarus and cost of maintaining one patient in a year, the general costs of the state of maintaining all patients with multiple sclerosis make more than 50 million bel. rub (~ 25 million dollars) in a year that significantly affects the budget of the state;
8. There is an urgent need of revision of schemes and tactics of treatment of multiple sclerosis for Republic of Belarus, the directions of the main part of funds for a factor cost, registration of the medicines which were widely adopted abroad.
The obtained data need to be used for registration of the new medicines which are changing the course of multiple sclerosis and having universal popularity in the Register of medicines of Republic of Belarus, drawing up schemes and tactics of treatment of various types of this pathology, change of financing on treatment of patients with multiple sclerosis, saving the budget of the state.
The conclusions received in this work will allow not only to improve quality of life of patients with multiple sclerosis, but also it is expedient to use the budget of the state, directing him mainly to a factor cost.

Bochkov Pavel
Preclinical and Clinical Pharmacokinetics of a Novel Dipeptide Anxiolytic GB-115

A novel dipeptide anxiolytic GB-115, designed and synthesized in the “Zakusov Research Institute of Pharmacology”, produced pronounced anxiolytic properties in different rodent models without adverse effects typical to benzodiazepines. The aim of this work was to evaluate GB-115 pharmacokinetics in rats, rabbits and volunteers in order to make a conclusion to recommend it for further clinical studies.
GB-115 substance was administered as a single oral dose (100 mg/kg) in rats, and tablet formulation was administered as a single oral dose (30 mg/kg) in rabbits and in healthy volunteers (15 mg tablets). Quantification of GB-115 in the rat, rabbit and human blood plasma was carried out by HPLC-MS/MS.
The main GB-115 pharmacokinetic parameters were calculated for different roots of administration. It was shown that GB-115 administered *per os* enters the rat brain, and also the GB-115 half-lifes in the real (chronological; t1/2el) and the corrected (pharmacokinetic; t1/2 el pk) times were calculated. There were some Interspecies differences founded in GB-115 pharmacokinetics: elimination rate constant decreased in order rat>human> rabbit, by contrast the half-life of GB-115 increased in order rat<human<rabbit.
Thereby, calculation of the half-life of GB-115 in humans based on the interspecies transfer corresponded to t1/2el obtained from volunteers and high relative bioavailability of the developed GB-115 (tablet) indicates the prospects of its application in medical practice.

Bortnikov Nikita
High selective TAAR1 agonist RO5263397 reduce saccharin deprivation effect in rats

TAAR1 is the promising target for the development of novel drugs to control a relapse to a drug addiction. The saccharine deprivation effect (SDE) is a preclinical model of the relapse-like behavior. SDE is expressed as an increase in the level of the saccharin consumption following a period of forced abstinence. The present study aimed to evaluate the action of the high-selective TAAR1 agonist RO5263397 (1 - 6 mg/kg) on SDE in rats. The pretreatment with RO5263397 (6 mg/kg) is shown to significantly reduce SDE. These results support that TAAR1 agonists can be effective in managing of the addiction relapse.

Chumakov Egor
Personalized approach to assessing the development and progression of cognitive impairment in patients with paranoid schizophrenia

Background: The problem of developing strategies for the early detection and treatment of cognitive impairment in schizophrenia is a priority in psychiatry.
Aims: to assess the biomarkers associated with cognitive impairment in patients with schizophrenia, to develop means for cognitive impairment correction.
Methods and materials: we examine patients with paranoid in remission, age from 18 to 50 years. We provide a single examination of a patient including the collection of anamnestic data, a clinical interview with the methods (BACS, The Calgary scale, The Colombian scale for assessing the risk of suicide, PANSS, SANS), a one-time blood sampling (we assess Interleukin 18 and 33, Cysteine, BDNF, hsCRP, NCAM).
Results: Along with the clinical assessment of cognitive impairment, primary and secondary negative symptoms and correlation of their severity with the biomarkers under study, it is planned to evaluate the effect of therapy, duration of untreated psychosis, family history, social status, rate of disease progression to cognitive impairment formation.
Conclusions: The results of our study will be used to early personalized diagnosis of the risk of developing cognitive impairment and their treatment.

Dariia Dmytrenko
Clinical case

Patient B., 31, a serviceman from Donetsk, who was on treatment from 03.12.2015 to 10.02.16. Complaints: cramps in the calf muscles, weakness in the legs, dizziness, intense headache, whistling in the ears, persistent insomnia (sleeping 2-3 hours a day), the fear of loud sounds and "noise of cars that approaching", feeling of danger, reducing of memory; he was examined with the help of the clinical interview, Mississippi Scale, DSM-V, SCL-90-R. Diagnosis - PTSD, he was treated by paroxetine, olanzapine, cognitive therapy for PTSD with positive results.

Dorofeev Evgeny
Functional asymmetry in affective disorders

Background: Now the problem of functional asymmetry and interhemispheric interaction at mentally sick draws more and more attention in scientific world. The research of influence of functional asymmetry on endogenic affective disorders may be the perspective direction in psychiatry.
Aims: To define influence of functional asymmetry on a clinical picture, the course of a disease and efficiency of therapy.
Method(s) and materials: inspection of 100 patients by means of clinical trials, psychodiagnostic scales, the questionnaire reflecting features of motor and sensory asymmetry (Annet,HDT, Dichotic listening, Luria's neuropsychological tests).
Results: It is planned to obtain the systematized data on influence of features of functional asymmetry and interhemispheric interaction on structure of psychopathologic syndromes at patients with endogenic affective disorders, efficiency of therapy, a current and the forecast of a disease.

Conclusions: Individual approach to diagnostics and treatment of affective diseases depending on a profile of functional asymmetry of patients will be reasonable and developed

Dorotenko Artem
Comparison of NMDA antagonists in an animal model of impulsive choice

1. Suicidal behaviour is associated with transient impulsive choice abnormalities. A delay discounting test (DDT) is a well-established model of impulsive choice in rats. Previous studies report antisuicidal effects of ketamine.
2. Compare effects of ketamine and MK-801, in DDT on rats.
3. DDT conducted in standard two-lever Skinner boxes. After initial shaping, the rats were exposed to two-lever discrete-trial delayed reinforcement task.
4. Ketamine at dose 10 mg/kg decreased the % of large reward choice and ,similarly, the number of the "large" lever presses.

The present results can support previously proposed view that non-NMDA mechanisms may be involved in the antisuicidal effect of ketamine.

Alexander Gorbunov
Search and development of novel antimigraine drugs from the group of tropane derivatives

Problem of migraine pharmacotherapy is determined by low efficacy of approved medications as well as by the amount of serious side effects they possess. We developed a novel screening method for drugs with antimigraine activity based on their capability to block cerebrovascular effects of selective (mCPP) and non-selective serotonin agonists. This approach allowed to discover tropoxin – a potent selective serotonin antagonist, which is now undergoing clinical trials. The second agent LK-933 is as potent, as tropoxin, but shows longer period of action and possesses a high anxiolytic activity (not detected with tropoxin). Tropoxin and LK-933 are promising drugs for migraine acute treatment and prophylaxis.

Gorev Kirill
Association study of genetic polymorphism MTHFR 677C>T with extrapyramidal side effects of antipsychotic treatment

Background: There is a positive link between T-allele of genetic polymorphism of methylenetetrahydrofolate reductase (hereinafter MTHFR) 677C>T and schizophrenia. In T-allele carriers the functional activity of MTHFR is reduced, which contributes to methylation deficiency. Furthermore, folate deficiency may lead to a lack of dopamine synthesis. It may underlie motor disorders. Objective: The aim of the present study was to analyze the association of MTHFR 677C>T genetic polymorphism with the severity of extrapyramidal side effects of antipsychotic treatment. METHODS AND MATERIALS: 61 patients with schizophrenia, previously examined for the carriage of alleles of single nucleotide polymorphism MTHFR677C> T, were examined for extrapyramidal side effects of neuroleptics by means of the Simpson-Angus scale (SAS). RESULTS: The mean score on the SAS scale in patients with the carriage of the T allele was significantly higher than in the comparison group (p=0.020). Conclusion: The obtained results are important for a personified reduction in the risks of extrapyramidal side effects, which is of importance for further research.

Ponomareva (Gruzdeva) Darya, Makeenko Vladimir
Identifying the relationship between the quality of life and the propensity for deviance and empathy in students of medical universities in St. Petersburg and Khabarovsk

The article describes the identification of the relationship between the quality of life and the propensity to deviance and empathy in students of medical universities in St. Petersburg and Khabarovsk.
Aims: The identification of the relationship between the quality of life and the propensity to deviance and empathy in students of medical universities in St. Petersburg and Khabarovsk.
Method(s) and materials: Two groups of students took part in the study. The first group consisted of 30 students of the Military Medical Academy (St. Petersburg). The second group of study included 30 students of the Far Eastern State Medical University (Khabarovsk).
Results: The propensity to deviant behavior of medical students depends on the quality of life. A lower quality of life and a higher level of inclination toward deviant behavior were noted among students at a medical university in Khabarovsk.
Conclusions: the second stage of the work aimed at drug correction of deviant behavior is planned.

Kalinin Ilya
Insulin can stimulate the compensatory action of autophagy and neuroplasticity for prevention neurodegeneration

Aim: To study the effect of intranasal insulin administration on learning, memory, as well as the expression of certain genes of autophagy, neurogenesis and neuroapoptosis.
Methods and materials: As a biological model, three-month-old male C57Bl6 mice will be used for intranasal administration of insulin and will be tested for Open Field model, and the next day in the New Object Recognition model (the Open Field installation of Columbus Instruments).After that RNA will be extracted from brain tissues, cDNA will be further synthesized and real-time PCR performed using the primers of the following genes: Ascl1, Numb, Notch2, Bcl-2, Cas-9, Cas-8, Cas-3, S100A6, Park-7, IR, IGF1-R and others. Naive animals will be used as additional control for PCR.
Expected results: An increase in the discrimination coefficient in the model "Recognition of a new object" is expected in experimental animals compared to the control, an increase in the expression of the genes S100A6, Ascl1, Numb, Notch2, Bcl-2, S100A6, Park-7, as well as a decrease in the expression of Cas-9 apoptosis genes , Cas-8, Cas-3.
Supposed conclusions: It is proposed to show the role of the insulin cascade in processes that are either disturbed during the development of neurodegenerative diseases (for example, a significant decrease in the expression of Notch2 and Numb in the hippocampus in parallel with a decrease in attention in aging animals) or participate in compensatory mechanisms.

Kalinina Anna
Prolyl endopeptidase inhibitors in Huntington's disease

Braak et al. (2004) supposed propagation of proteins as main mechanism of developing neurodegenerative diseases, e.g. a-synuclein (a-syn) in Parkinson's disease (PD), Huntingtin (Htt) in Huntington's disease (HD). Prolyl endopeptidase (PREP) has been implicated in the α-syn aggregation process in case of PD that could be reduced by PREP inhibitors.
The aim: to determine the effects of PREP inhibitor (KYP-2047) in the HD model. Methods: HeLa cell culture with stably expression of Htt, viability assay, microscopy and Western Blot. Eventually, KYP-2047 has shown it's efficacy in HD treatment. Therefore, PREP inhibitors could potentially be used in treatment of neurodegenerative diseases.

Kasyanov Evgeny
Clinical case

A 30-year-old woman suffered several depressive episodes. She received treatment with escitalopram in moderate therapeutic doses The response to therapy has always been partial, there were minor symptoms in the form of fatigue, insomnia and anhedonia. After injury she had been

taking a course of vitamins B6, B9 and B12 according to the appointment of neurologist. Right after that she felt an improvement in her mental state. However, depressive complaints returned again after the end of the course of vitamins. Patient was referred to a blood test after reporting this information to the doctor. By the results of the analysis, a decreased level of folic acid and hyperhomocysteinemia was revealed. Then the patient was sent for genetic analysis, where polymorphisms of the genes MTHFR (C677T), MTHFR (C67 7T), MTR (A2756G), involved in homocysteine metabolism, were detected. Based on the results of the examinations, rational augmentation of escitalopram with B9 and B12 vitamins was made.

Mikhail Khalimanov
Design and Analysis of multitarget agents with antidepressant activity and cognitive enhancement effects

Background: Nowadays there is a need for drugs that at the same time improve cognitive-mnestic functions, have an antidepressant, psychoactivating effect, which can be used both in the therapy of cognitive disorders and depressive episodes, and in healthy patients for short-term enhancement of cognitive functions.
Aims: The aim of this study is the development of new drugs that have antidepressant, procognitive and mnemotropic effects.
Methods and materials: The fragment-based drug-design, probable metabolism, toxicological parameters, and molecular docking based on the AutoDock Vina, and SWISS ADME programs using the receptor models from the Protein Data Bank base were used as the main development and analysis method.
Results: By the molecular modeling method, structures of substances possessing potential mnemotropic and antidepressant activity, facilitating memory consolidation, improving social-behavioral functions were obtained.
Perspectives of using these agents for possible treatment of depression, cognitive disorders, as well as use for healthy people in stressful situations and with high mental loads were shown.

Kiyan Kseniya
The prevalence of Restless legs syndrome in Russia and the relationship with depressive and anxiety

Restless legs syndrome (RLS) has received considerable attention in recent years: about 50 observational studies were published in the last decade around the world. According to recent studies the prevalence of the syndrome varies from 15% to 1.9% . At the same time in Russia this syndrome is not known and many experts do not even hear about it. Often, the doctor did not pay attention to this disease, but excludes its pathology. The patient takes the foot therapist, surgeon, phlebologist, orthopedist, endocrinologist, neurologist, etc.- but often left with the problem alone.
Objective: 1)To determine the prevalence of RLS in the population; 2) determine the prevalence of RLS at a phlebologist's; 3) examine the possible relationship RLS with anxiety and depressive conditions in the population; 4) determine the prevalence of a sleep and mood disorder and in patients with a syndrome of restless legs on the primary reception of a phlebologist.
Method: 1) We examined 582 employees of enterprises in Moscow and the Moscow region, the study was conducted directly. It was among the 450 patients (77.5%) women and 131 (22.5%) men aged 18 to 80 years (mean age 45.1 years). We used criteria IRLSSG 2003. 2) Survey conducted screening for the presence of restless legs syndrome and scale of severity among patients first consult a doctor phlebologist. It was among the 416 women surveyed (86%) and 69 (14%) of men aged 24 to 78 years. (mean age 47.1 years). We used criteria IRLSSG 2003, IRLSSG severity scale.
3) Subclinical depression was revealed in 20 of 81 (24.7%) patients with RLS, in the group with no RLS subclinical depression was 28 of 501 (5.6%). Subclinical anxiety was revealed in 29 of 81 (35.8%) patients with RLS, in the group where there was no RLS subclinical depression was 77 of 501 (15.4%).

Clinical anxiety was revealed in 15 of 81 (18.5%) patients with RLS, in the group where there was no RLS subclinical depression was 42 of 501 (8.4%). We used HADS scale.
Results: 1)The population prevalence RLS was 14%. 2) The prevalence RLS patients who came to the doctor-phlebologist was 12% (10% very severe, 39% severe, 46% moderate, 5% soft). 3) In patients with RLS, subclinical depression was 4 times more common, subclinical anxiety and clinical anxiety were 2 times more likely than in people who did not have RLS
Conclusion: Our results indicate a high prevalence of RLS in Russia, while the prevalence of RLS in the population and among phlebological patients is not significantly different. Also our preliminary results indicate the combination of RLS with depressive and anxiety states in the population. Next, we plan to study the incidence of sleep and mood disorders among patients with RLS detected at a primary reception in a phlebologist.

Klepikov Dmitry
Personalized therapy of depressive disorders

Depressive disorders are highly prevalent in population. Around 5% of people have depression, and lifelong risk of depression is around 20%. Aim of this work will be the development of personalized psychopharmacotherapy in patients with depressive disorders using pharmacogenetic methods. We plan to use psychometric scale for assessment of patients, scan for genetic markers, and then observing the effect of antidepressant drugs. We want to determine the prevalence of pharmacogenomic biomarkers of sensitivity to antidepressants in Kazakhstan population. Results of this work can be used to improve outcomes in treating depression.

Kondrateva Rimma
Eating disorders of children with ASD

One of the most important problems impeding the socialization of children with ASD is Eating Disorders.
The main purpose of this study is classifying of EDs in children with ASD.
The study is planned to be conducted at the base of in the department for preschoolers of the G.Sukhoreva Scientific-Practical Center with the participation of one main and 2 control groups.
I hope to explore different variants of the ED and a possible connection with gastrointestinal pathology.
The results of the study can be used to develop recommendations for the correction of ED in children with ASD.

Kutepova Inga
Search for compounds with anticonvulsant and neuroprotective properties among furan derivatives

Increase in number of patients with strokes (450 000 people annually) is one of the reasons for increase in number of epilepsy. Post-stroke epilepsy was identified as significant clinical issue (incident rate 7%) in stroke survivors. Epileptic seizures lead to neuron’s death, what causes dysfunction of central nervous system and reduces effectiveness of certain antiepileptic drugs.
My research is dedicated to the search for new compounds that can combine protection from seizures and epileptic encephalopathy, as well as prevent neurodegeneration and epileptogenesis after cerebral stroke.

Lapshin Mikhail
An influence of certain biological factors in determination of autism spectrum disorders

Introduction: At the present stage the relevance of etiology and pathogenesis of autism spectrum disorders remains high demanded. This is primarily due to the high incidence of childhood autism. A number of studies have shown that deficiency of the protein H2AX causes genomic instability, contributing to cell death. A recent study (Gruosso et al., 2016) revealed a new mechanism for the relationship between the levels of H2AX, free radicals (ROS) and NRF2. Therefore, with chronic stress typical for patients with ASD, it can be expected that cells with high NRF2 production will maintain a high level of H2AX. A number of publications also confirm that increased generation of free radicals occurs in children with autism (Smaga et al., 2015).
Purpose of the study: To establish possible interrelations of some genetic factors and features of structural and dynamic characteristics of autism spectrum disorders.
Material and methods of the investigation: The study was conducted jointly in the framework of research «Polymorphism of the locus NRF2 in patients with early childhood autism and the relationship of individual clinical parameters with allelic variants of NRF2». The study was conducted on the basis of the pre-school psychiatric department of the «Scientific and Practical Center for Mental Health n.a. G.E. Sukhareva» in 2017-2018 year. 94 children aged 3 to 7 years with autism spectrum disorders were examined. The clinical-psychopathological survey principle, the Childhood Autism Rating Scale (CARS) scales for the purpose of determining the extent of autistic disorders, Social Communication Questionnare (SCQ), were used to verify the diagnosis of autism.
Characteristics of the sample: children's autism (F84.02) - 61 children; atypical autism with mental retardation (F84.11) - 7 children, atypical autism without mental retardation (F84.12) - 8 children, other common developmental disorders with syndromic diagnosis of early childhood autism (F84.8) - 18 children. Children with moderate and mild manifestations of autistic disorders - 41 people, children with severe autistic disorders - 54 people (CARS scales, SCQ). Signs in the history of the presence of a psychotic episode marked a regress of mental development were noted in 38 children. In the remaining cases (56 people), autistic disorders could be regarded as evolutionary conditions.
Results of the investigation: All the children participating in the investigation had a difference from the control group of the protein level H2AX in leukocytes (P = 0.039). Since the histone key repair protein H2AX is a key marker of chronic genotoxic stress, characteristic of cells of patients with autism, it can be assumed that children with autistic spectrum disorders are more prone to chronic stress. Conclusions: The study suggests that the genotyping of polymorphic variants of NRF2 and the expression of the active forms of key proteins of an adaptive response to genotoxic stress will help create personalized approaches to the treatment of autism spectrum disorders.

Mamedova Galina
Abnormal cortical structure's features (an MRI study) in patients with different types of endogenic psychosis in association with pathopsychology premorbid adjustment

Psychiatric disorders criteria are going through global reconsideration nowadays, based on progress of neuroimaging methods. This investigation was a cross-sectional MRI 3T study with follow-up assessment of various regional morphometric properties based on cortical surface reconstruction. Our aim was to determine the association between structural brain aberrances and clinical properties of endogenic psychosis and characterological features (TEMPS-A, five-factor model (5PFQ), Personality Belief Questionnaire). Participants included individuals in 3 study groups: healthy controls, catatonic endogenic psychosis and paranoid endogenic psychosis. This study potentially will make a significant contribution to our understanding of the etiopathogenesis of clinical types of psychosis. To date, the collection of MRI images of patients of the Alekseev Psychiatric Clinical Hospital №1, Moscow, Russia, and healthy control group has been gathered, the data processing is underway.

Miroshnikov Michael
Anxiolytic activity of the new derivative diazepinobenzimidazole DAB-21

The development and implementation of new anxiolytic drugs that do not have a wide range of undesirable effects is important at the moment. The substances of greatest interest are derivatives of diazepinobenzimidazole.
Study of the anxiolytic effect of DAB-21 compounds.
The tests used are "Elevated plus maze labyrinth", "Dark-light camera","Open field", "Vogel test".
The tranquilizing activity of the new diazepinobenzimidazole derivative was revealed.
As a result of the study, it was found that the compound DAB-21, exhibits pronounced anxiolytic properties, superior properties of the reference product - diazepam.

Moskaleva Polina
Clinical case

Juvenile myoclonic epilepsy (JME) is the most common form of generalized epilepsy. The basis of rehabilitation of patients with JME balanced on antiepileptic therapy (AET), in which the drug is sufficiently effective and has no side effects, because the side effects of AET are usually due to the pharmacogenetic profile of the patient.
The report describes the clinical case of acute psychosis aggravate and Stevens-Johnson syndrome in irrational drug therapy of JME in teenage girl – «slow metabolizer», which were an indication for emergency hospitalization in psychoneurological clinic, disruption of socialization and learning.

Nosova Eugenia
Trends of Suicide Mortality in Kaluga Region from 2003 to 2016

Background: The last 30 years Russia is still among countries with high suicide rates: over 20 cases per 100 000 population. Multi-ethnic and multi-religious peculiarities of Russia, great differences of the suicide mortality rates between regions highlight the need for thorough investigation of this issue according to the local context.
Aim: The detailed analysis of suicidal mortality in Kaluga Region, searching for «trouble spots» on the regional map, identification of «at-risk» groups for priority interventions.
Method(s) and materials: the retrospective longitudinal design has been employed. The local data of suicide rates from 2003 to 2016 have been analysed using the mathematical statistics.
Results: the data analysis shows decreases in regional suicide rates with heterogeneous dynamics in districts.
Conclusions: the results of the study are intended to be used as the backbone of the suicide prevention development in Kaluga Region.

Paramonov Andrey
Subjective view on alcohol intoxication in gender aspect

Some differences of objective and subjective view of alcohol intoxication is a start for possible inadequate actions as in quiet situation, as in dangerous situation.
The purpose of the research was identification of gender features of subjective feeling of physiological and psychological changes at alcoholic intoxication.
We have examined 91 persons aged from 18 up to 29 years.
We have examined the behavior in a state of intoxication from the point of view of the most frequently used - medico-social and psychological criteria. At the same time, there are other approaches that are followed by studying.
There is a study now, which complements this methodology and will show the correlation between studied factors with social and personal criteria.

Ptukha Maria

The effect of TAAR5 (type 5 trace amine-associated receptor) agonist on mice electrocorticogram (EcoG) and behavior

TAARs is a family of membrane receptors that have trace amines as their ligands. Trace amines and their receptors have been linked to various dysfunctions in mammalian organ systems. Our study centered around TAAR5 – one of the least researched types of TAARs.
During the experiments mice were given a specific TAAR5 agonist (□-NETA) in various doses while EcoG was recorded and behavioral tests were performed. The results showed changes in behavior and a significant increase of EcoG power in delta range after the injection. These results may help us understand the role of TAARs in psychiatric disorders, such as schizophrenia.

Rukavishnikov Grigory
Genetic and biological profiles for therapeutic resistance risks in antidepressant treatment

Background: According to recent data, therapeutic resistance (TR) in depression could be classified into relative (for certain drug groups) and biological (for certain individual cohorts) subtypes.
Aims: The aim of our study is to evaluate and integrate the most informative genetic, clinical and biological data for high risks cohorts of biological TR in antidepressant treatment.
Method(s) and materials: In our multicenter prospective longitudinal study patients with major depressive disorder are evaluated with complex genetic and laboratory panel and the battery of psychometric scales at baseline, 14 and 28 days during antidepressant treatment.
Results: The received data will allow to prove the hypothesis of certain genetic and clinicbiological profiles for biological TR risks.
Conclusions: Our study will allow to predict the risks of non-response in antidepressant treatment and form the basis for individualized therapeutic strategies.

Savchenko Artem
Neurochemical changes induced by schedule-induced polydipsia in rats

Schedule-induced polydipsia (SIP) is used preclinically to look for drugs with anticompulsive action. However, neurochemical basis of SIP remains poorly understood. The present study was aimed to evaluate the effect of the polydipsia on levels of monoamines and their metabolites in brain structures. On the final experimental day, the SIP acquired rats were divided into two groups: the rats of one group were placed in operant boxes with access to water bottle, whereas the rats of the other group were in the boxes without bottle. After, the brain tissues were taken for HPLC analysis. The results are coming.

Severina Yulia
Recurrent suicidal behavior in adolescents with affective disorders

The purpose of our research is to study the causes of suicides and to identify predictors of suicidal behavior among adolescents suffering from affective disorders. The work which planned on the basis of the SPCAMHC n.a. G Sukhareva, will be the result of a study of 200 patients aged 12 to 17 years with affective disorders in structure of various mental illnesses, who were hospitalized in connection with recurrent suicidal behavior. The study will use clinical-psychopathological, clinical-catamnestic, psychometric, pathopsychological and statistical methods, with the help of which the features and dynamics of suicidal behavior of adolescents with affective disorders will be studied. In our opinion, the main results of this planned work is the creation of a unified system of prognostic, treatment, rehabilitation and preventive measures, the application of which will significantly reduce the number of deaths and prevent early disability of adolescents.

Shaposhnikov Kirill
Research of a new atypical antipsychotic drug

Our team unintentionally discovered the psychotropic activity of a well-known herb and aimed to develop an atypical antipsychotic drug. At the moment extrapolation and openfield trials were conducted. The results indicate an antipsychotic effect without the search and locomotor activity. We found that this antipsychotic drug does not have deprivation effects. Now everything is ready to explore its chronic toxicity and move on to clinical trials. At the end of it, this drug means being ready to cure psychotic illnesses without tardive dyskinesia and sedative and metabolic side effects.

Sorokin Mikhail
Typology of psychiatric patients in regard to motivation and adherence for treatment

Background: Difficulties in decision making process about treatment in psychiatric patients determine the importance to reveil patients' clusters according to their needs of specific therapeutic interventions.
Aims: to reveal a typology of psychiatric patients with the use of the original questionnaires.
Method(s) and materials: factor and k-mean cluster analysis, 91 psychiatric inpatients.
Results: the behaviour patterns during medication were described depending on the structure of treatment motivation in revealed patients' types.
Conclusions: not quantitative but qualitative indicators of patients' therapeutic motivation were important for prediction of compliance in psychiatric treatment.

Sukhanova Anna
Evaluation of metabolic disorders in patients with schizophrenia with the carriage of different alleles of single nucleotid polymorphism of mthfr677c>t

Background. To predict the development of metabolic disorders and personalized treatment selection, it`s important to study the association of individual genetic factors with the presence of metabolic disorders in patients receiving long-term antipsychotic treatment. Aim. Evaluation of the association between the carriage of the T-allele of genetic polymorphism MTHFR677C> T and the severity of the antipsychotics metabolic disorders. Materials/methods: Patients with schizophrenia genotyped for the carriage of MTHFR677C> T alleles were examined for metabolic disorders. Data on the drugs taken by the patients were collected. Results. Obesity in the main group (with T-allele) was more common than in the control group (CC-genotype). Conclusions. The presence of the minor T-allele at the MTHFR677C>T locus can be considered as a genetic risk factor for the development of metabolic disorders, which requires further study.

Sysoev Yuriy
Investigation of alpha-2 adrenergic receptor subtypes in the locomotor function in the acute decerebrated cat model

Background: The neurotransmitter systems widely distributed throughout the spinal cord are involved in the regulation of various essential functions. Previously it was shown that alpha-2 adrenergic agonists (clonidine, tizanidine and others) can initiate/modulate locomotion in different species. However, to date there is no data about the role of alpha-2 adrenergic receptors subtypes in generation or modulation of stepping movement.
Aims: Investigation of alpha-2 adrenergic receptor subtypes in the locomotor function in the acute decerebrated cat model.
Method(s) and materials: in the acute decerebrated cat model the kinematic, EMG and evoked potentials parameters of stepping movement were estimated during the tail pinching, epidural

stimulation (ES) and folelimb+ES locomotion after the administration of alpha-2A. 2B and 2C antagonists, respectively.
Results: different alpha-2 adrenergic receptors subtypes had different patterns of influence on the cat locomotor function. Blocking of alpha-2C adrenergic receptors led to decrease of EMG activity and reduced the amplitude of short- and long-latency potentials.

Tolmachev Mikhail
***LEPR* Lys656Asn (rs8179183) and *LEP* (rs3828942) as markers of antipsychotics – induced metabolic disorders, preliminary results**

Antipsychotics - induced metabolic disorders are the main side effects of antipsychotic therapy which lead to decline in the quality of life and reduced life expectancy. We are focused on the validation of SNPs as markers of antipsychotics treatment side effects. Patients have been taking antipsychotics in monotherapy mode and have passed physical and blood tests before and after treatment and genetic tests after period of observation. *LEPR* Lys656Asn (rs8179183) and *LEP* (rs3828942) are associated with biochemical and weight changes such as different type of antipsychotics. The results could be used in future diagnostic panel of antipsychotics side effects.

Trachuk Pavel
The potential safety of naltrexone and nalmefene use for chronic pain among HIV-positive drinkers: a double-blind randomized clinical trial

Opioid receptor antagonists could become a therapeutic alternative to opioid analgesics and NSAIDs for chronic pain in HIV-positive persons. The main purpose of this pilot study is to assess the safety of low-dose naltrexone (NTX) and nalmefene (NMF) use for chronic pain among HIV-positive drinkers. The study is a 8-week, double-blind, controlled, and randomized. Preliminary review of blinded safety data indicated that the study medication in the group A not being tolerable. Since there is lack of evidence of NMF safety in this sample of patients, it seems that group A study medication is NMF.

Tur Margarita
Behavioral profile of DAT-KO rats: Water Escape Test and Forced Swim Test

DAT-knockout rats are the new animal model to study hyperdopaminergia. The present study aimed to evaluate behavior DAT-KO rats in two Water Escape Test (WET) and Forced Swim Test (FST) used to assess depressive-like behavior, the level of emotionality and cognitive abilities in acute stress conditions. In WET, cognitive impairment was detected in DAT-KO rats. They could not solve the task of extrapolation under the stressful conditions. In FST, DAT-KO rats demonstrated hyperactivity (increased the escape-oriented activity). This may be due to the increased emotionality of the animals, which is also supported by the high level of defecation.

Vaganova (Samulyzhko) Iuliana
Comparative evaluation of the effectiveness of three-stage inpatient and outpatient treatment for patients with medication overuse headache

Background: Prevalence of medication overuse headache (MOH) is 1-2 %, it has the third position among chronic forms of cephalalgias after migraine and tension-type headache.
Aims: Comparative evaluation of efficacy and safety of the three-stage and two-stage methods of treatment MOH.
Method(s) and materials: 41 patients with medication overuse headache were examined. Three-stage treatment in the main group was included withdrawal of analgesics and/or triptans (AT), the use of multimodal intensive detoxification pharmacotherapy (MIDP), prescription prophylactic

treatment. Two-stage treatment in the comparison group was included withdrawal of AT, prescription prophylactic treatment.
Results: One month after MIDP, 68 % patients in the main group statistically significantly reduced frequency of overuse AT compared to the comparison group and the baseline period ($p < 0.05$).
Conclusions: The using of the MIDP with withdrawal therapy and preventive treatment can successfully and safely stop MOH and prevent or reduce the severity of the "withdrawal syndrome" of the "rebound headache" and also prevent the recurrence of MOH relapse after 1 month.

Zhilyaeva Tatiana

Secondary but not primary negative symptoms of schizophrenia are associated with carriage of minor allele of genetic polymorphism MTHFR677C>T

Background: J.L.Roffman et al. reported (2011) that folate metabolism disturbances (T-allele carriage of genetic single nucleotide polymorphism of folate metabolism key enzyme MTHFR677C>T) are associated with severity of negative symptoms of schizophrenia. But in those study patients received antipsychotics, so it is impossible to exclude the secondary pharmacogenic nature of negative symptoms.
The aim of this study was to evaluate the association of T-allele of MTHFR677C>T with the severity of negative symptoms of schizophrenia at different stages of treatment to establish the role of the pharmacogenic factor in the onset of the negative symptoms associated with folate deficiency.
Methods: Patients with schizophrenia were examined with PANSS after 10 days of inpatient treatment (n=106), and in the first 1-3 days after admission to hospital (n=59) and examined by the PCR method for the carriage of alleles of MTHFR677C>T.
Results: Carriers of the T-allele vs patients with wild genotype after 10 days of treatment had the greater severity of some negative symptoms: affect flattening ($p=0.029$), passive-apathic social seclusion ($p=0.014$) , stereotyped thinking ($p=0.044$), however at the begining of hospitalization there were no differences in the severity of negative symptoms between subgroups with/without T-allele.
Conclusions: More pronounced negative symptoms in patients with T-allele may be antipsychotic-induced secondary negative symptoms, but not primary symptoms of schizophrenia.
Keywords: schizophrenia, folate deficiency, MTHFR 677 C>T genetic polymorphism, negative symptoms.