

# Education System in Neurosciences

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**Helena Rösslerová**

**Lundbeck Czech Republic, May 2018**

# The Lundbeck Institute

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- Medical education and scientific organization
- Established by **H. Lundbeck A/S** in 1997

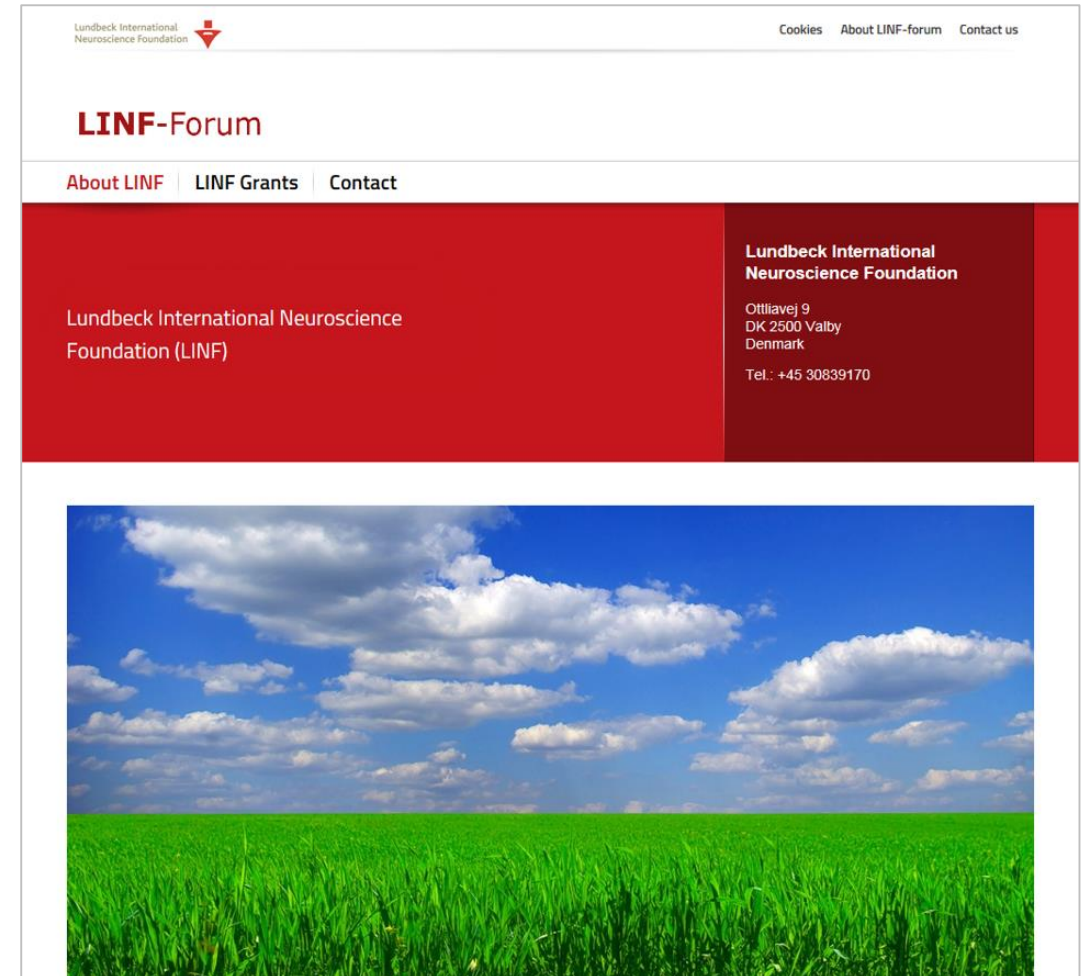
# Governance

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Lundbeck Institute educational activities are governed and approved by Lundbeck International Neuroscience Foundation (**LINF**)

- **LINF**
  - Separate legal entity
  - Educational activities guarantee
    - ✓ Unbiased
    - ✓ CNS diseases focused
    - ✓ Patients quality of life focused
  - Educational grants evaluation + allocation

[www.linf-forum.com](http://www.linf-forum.com)



## The **LINF** Faculty

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- 59 top experts in psychiatry, neurology, psychopharmacology, health economics etc.
- Expert speakers at Lundbeck Institute Seminars
- Advising, reviewing and approving educational material created by Lundbeck Institute
- Network of key experts with valuable and longlasting relationship

# LINF Faculty members

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- Prof. Celso Arango López, **Spain**
- Dr. Mary G Baker, **United Kingdom**
- Prof. Sube Banerjee, **United Kingdom**
- Prof. Patrice Boyer, **France**
- Dr. Piu Chan, **China**
- Dr. Christopher Chen, **Singapore**
- Prof. Christoph Correll, **United States**
- Dr. Koen Demyttanaere, **Belgium**
- Prof. Ian Paul Overall, **Australia**
- Prof. Michael B. First, **United States**
- Dr. Yuriy Flomin, **Ukraine**
- Prof. Russell G. Foster, **United Kingdom**
- Prof. Wolfgang Gaebel, **Germany**
- Prof. Serge Gauthier, **Canada**
- Prof. Guy Goodwin, **United Kingdom**
- Prof. Philip Gorwood, **France**
- Prof. Oyewusi Gureje, **Nigeria**
- Prof. Jaanus Harro, **Estonia**
- Prof. Gerhard Heinze, **Mexico**
- Prof. Cyril Höschl, **Czech Republic**
- Prof. Pavel Kalvach, **Czech Republic**
- Prof. John M. Kane, **United States**
- Prof. Sidney H. Kennedy, **Canada**
- Prof. Evgeny Krupitsky, **Russian Federation**
- Prof. Raymond W. Lam, **Canada**
- Prof. Emeritus Brian Leonard, **Ireland**
- Prof. Stefan Leucht, **Germany**
- Prof. Julien Mendlewicz, **Belgium**
- Prof. Andreas Meyer-Lindenberg, **Germany**
- Prof. Driss Moussaoui, **Morocco**
- Prof. David Nutt, **United Kingdom**
- Prof. Tarek Ahmed Okasha, **Egypt**
- Prof. Solomon Rataemane, **South Africa**
- Dr. Ramesh Sahathevan, **Australia**
- Prof. Norman Sartorius, **Switzerland**
- Prof. Michael Soyka, **Switzerland**
- Prof. Dan J Stein, **South Africa**
- Prof. Siu Wa Tang, **Hong Kong**
- Prof. Emeritus John Tiller, **Australia**
- Prof. Eduard Vieta, **Spain**
- Prof. Bengt Winblad, **Sweden**
- Prof. Hans-Ulrich Wittchen, **Germany**
- Prof. Allan Young, **United Kingdom**
- Prof. Xin Yu, **China**
- Prof. Joseph Zohar, **Israel**



# Lundbeck Institute



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# Mission & Vision

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## Mission

Develop, provide and cascade unbiased, evidence-based medical education from leading experts to health care professionals and create a forum to facilitate knowledge sharing, networking and collaborations

## Vision

Provide accessible high quality medical education worldwide, to support health care professionals to improve quality of life of patients suffering from psychiatric or neurological diseases, to optimize care through up-to-date disease understanding

# Activites

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Non-product related

Build upon objective and evidence-based knowledge

- Seminars
- Publications
- Resource library



# Activites

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Non-product related

Build upon objective and evidence-based knowledge

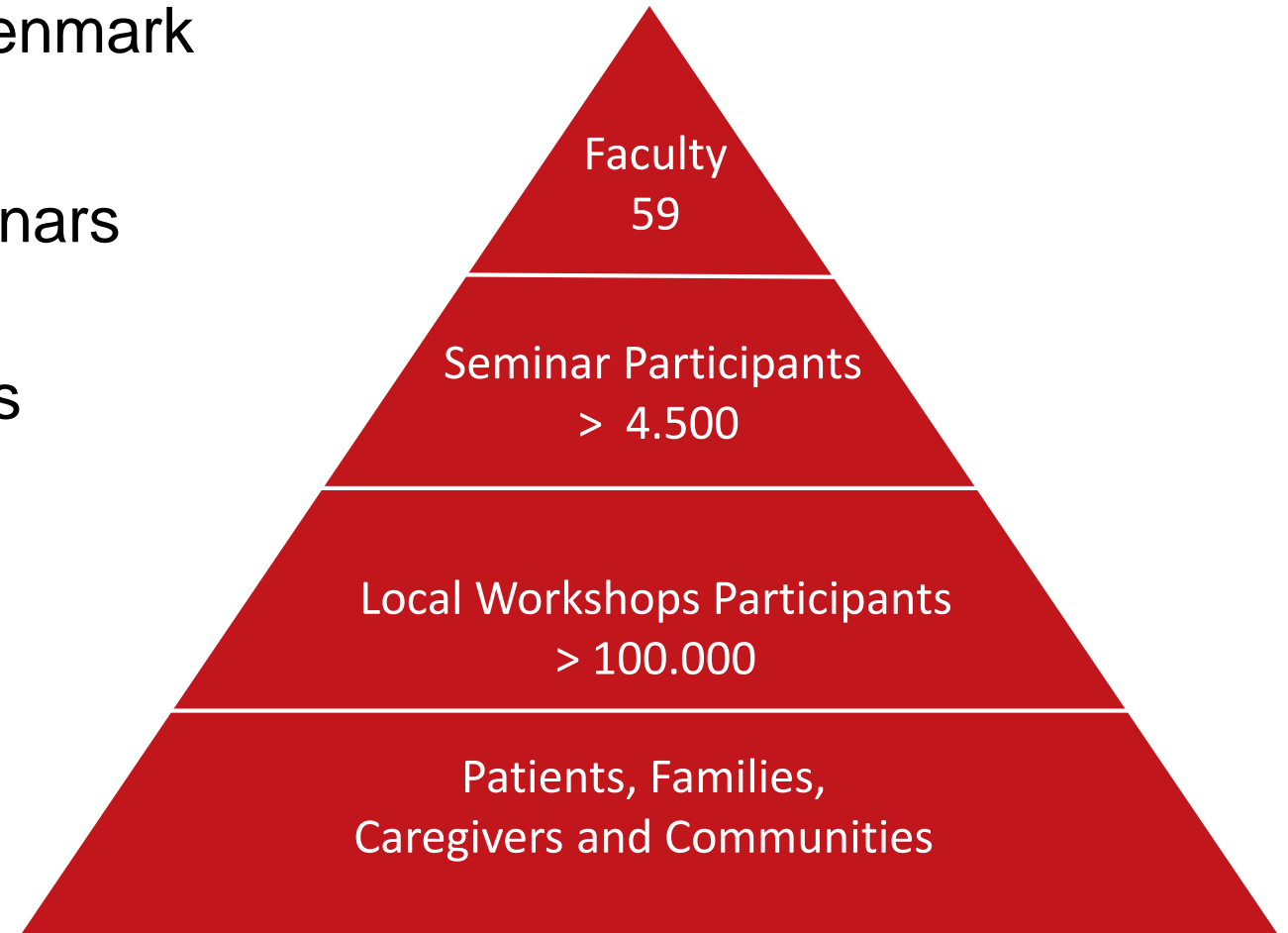
- Seminars
- Publications
- Resource library



# Lundbeck Institute seminars – cascading knowledge

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- Lundbeck Institute Seminars in Denmark
- Regional Lundbeck Institute Seminars
- Local Lundbeck Institute Seminars



# Lundbeck Insitute seminars – how it works?

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- Interactive and group work focused
- EACIC accreditation
- 3 days, 2 experts – speakers
- 2 – 3 seminars / year in Denmark
- 2 – 3 seminars / year outside Denmark
- 20-35 specialists / seminar from different countries worldwide

# Lundbeck Institute seminars 2018 – topics

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- Dementia
- Mood Disorders
- Schizophrenia
- Parkinson's Disease

\*The Lundbeck Institute seminars, which cover mood disorders, schizophrenia, dementia and Parkinson's disease, are open to all. Please note that The Lundbeck Institute cannot guarantee that there are places available at your chosen seminar. For further information on seminar content and seminar fees please contact us at [seminars@lundbeck.com](mailto:seminars@lundbeck.com)

# Activites

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Non-product related

Build upon objective and evidence-based knowledge

- Seminars
- Publications
- Resource library





Knowledge Building







# Publications – Magazines

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## Lundbeck Institute Magazines

DATE PUBLISHED  
07.06.2017


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### Welcome to the Lundbeck Institute Magazines


The Lundbeck Institute publishes a bi-annual magazine which contains relevant and up-to-date articles within psychiatry and neurology. Each article is based on the content of expert lectures presented by CNS specialists.






**The Informatics Revolution and CNS disorders**  
17<sup>th</sup> UNF Faculty meeting,  
San Sebastian, Spain, 5<sup>th</sup> - 7<sup>th</sup> June 2015



**Hot Debates in CNS Disorders**  
Is Cognitive Impairment in Mental Disorders  
an Endophenotype or an Epiphenomenon?  
14<sup>th</sup> UNF Faculty meeting, Madrid, Spain, 20<sup>th</sup> - 21<sup>st</sup> May 2014

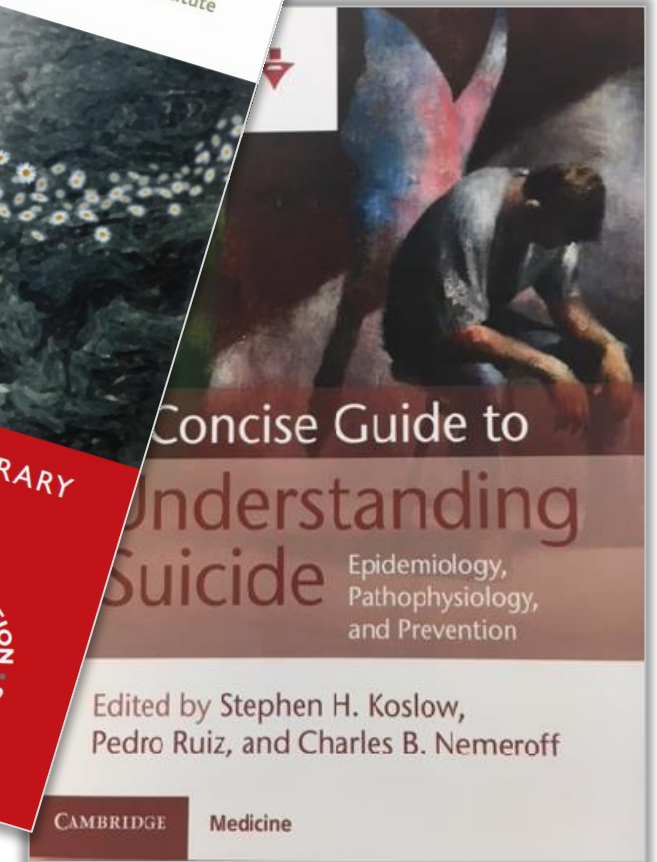
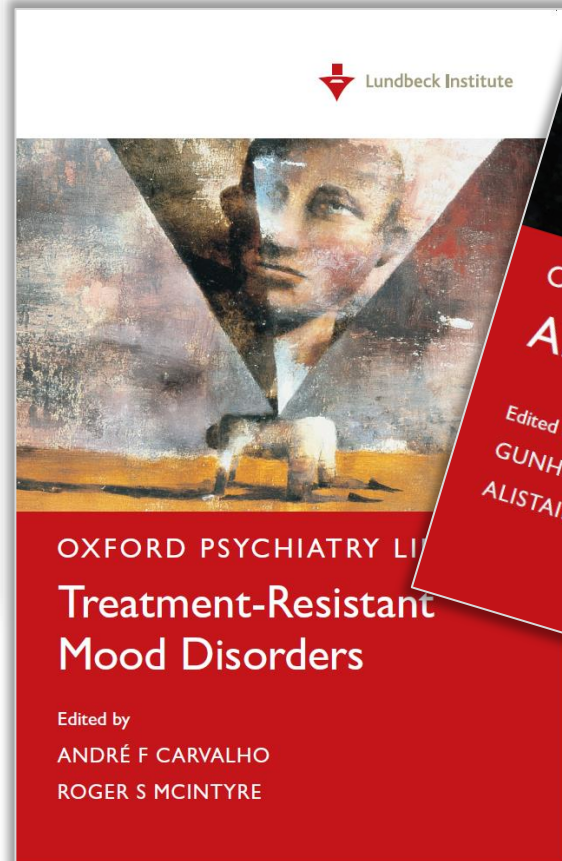
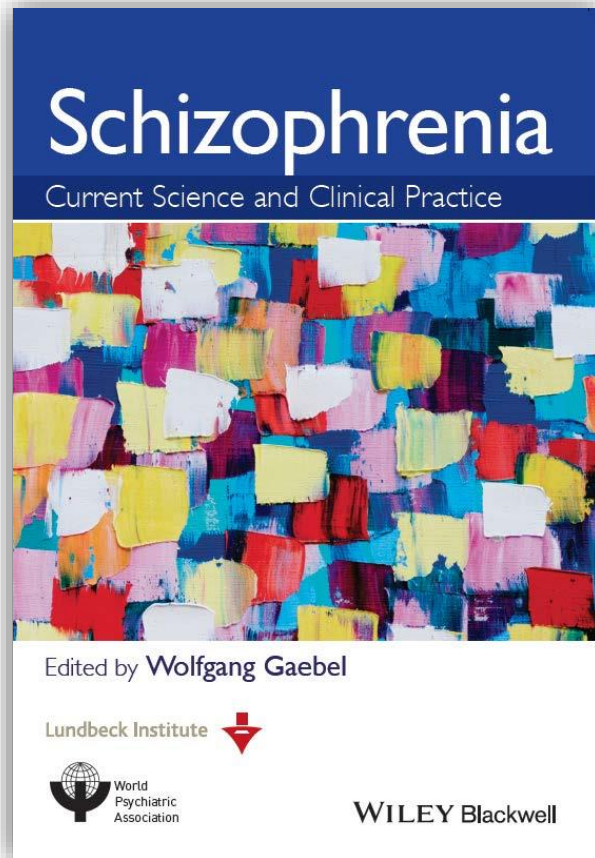


**Medical Education**  
What education is needed to improve outcomes  
for people with mental and neurological disorders?



# Publications – Books



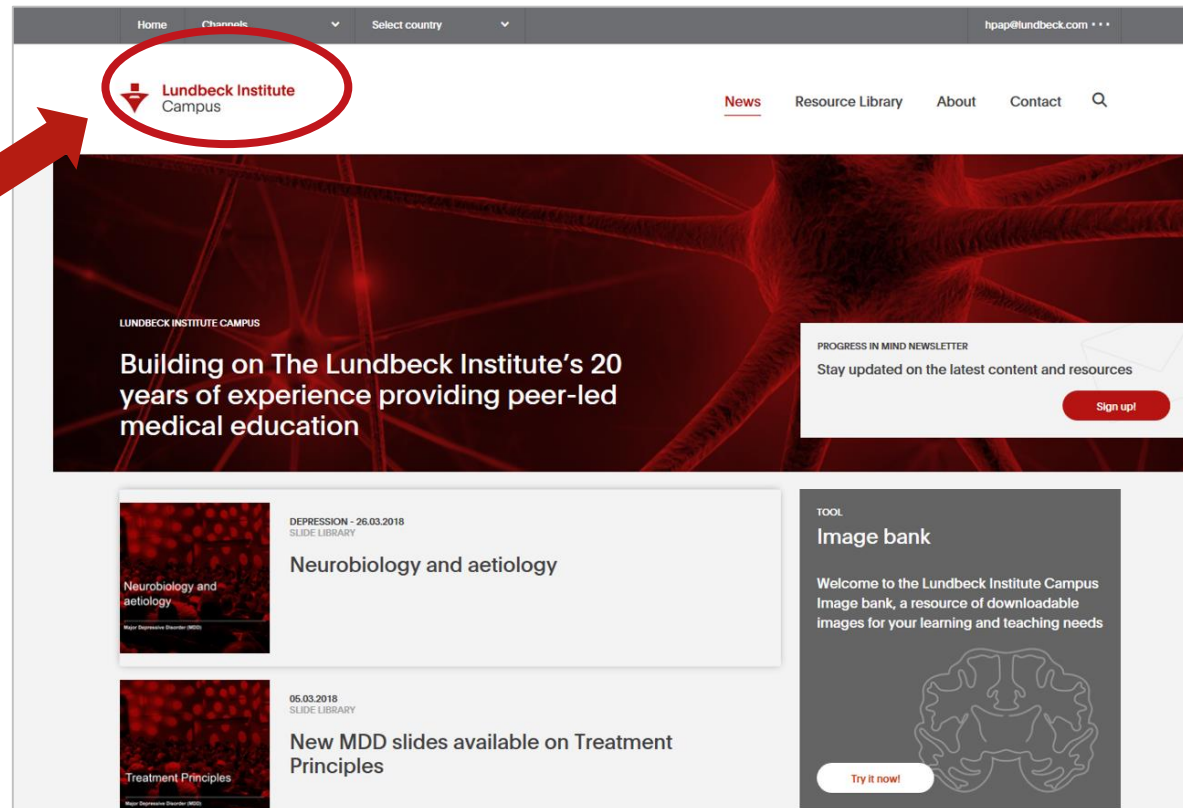


# Activites

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Non-product related  
Build upon objective and evidence-based knowledge

- Seminars
- Publications
- Resource library



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# Lundbeck Institute Campus – Editorial Board

Meet the editorial board



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PROFESSOR  
Philip Gorwood



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# Lundbeck Institute Campus – Resource Library

**Lundbeck Institute Campus**

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## About the Resource Library

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13.05.2016

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The Lundbeck Institute Campus resource library is organized into three parts: image bank, slide library and the Visualizing Medicine (VM) Library. The three parts are designed with consistent color and nomenclature code, allowing you to integrate different elements for your own learning and teaching needs. This means that neurotransmitters and drug targets are colour coded across the slides, image bank and VM library.

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### Related

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ARTICLE  
Visualising Medicine Library

11.02.2016  
ARTICLE  
Image Bank

11.05.2016  
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Slide Library

### Visualizing Medicine Library:

- A fast and systematic way to check mode of action of medicines in CNS

### Image Bank:

- A resource of downloadable images for your learning and teaching needs

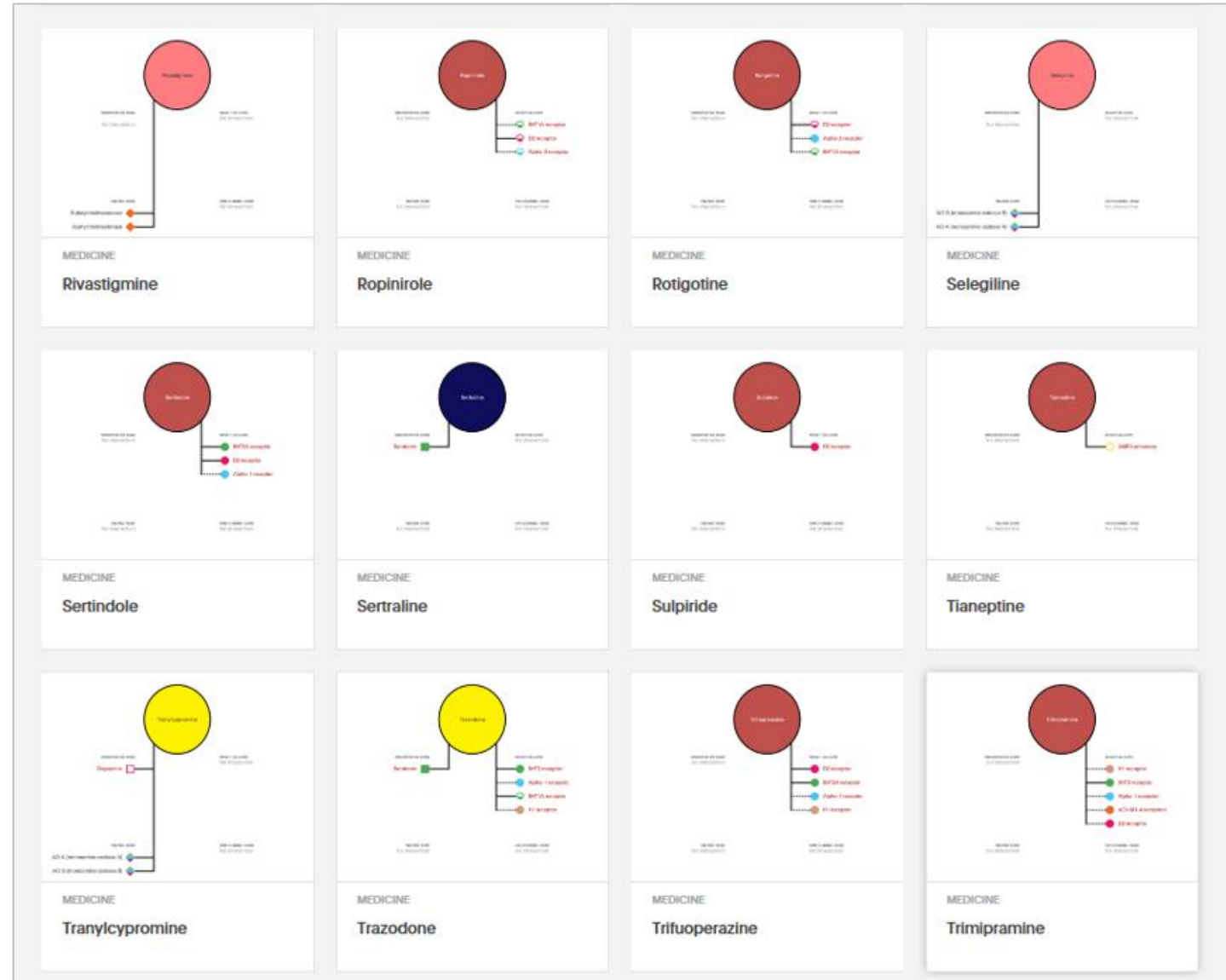
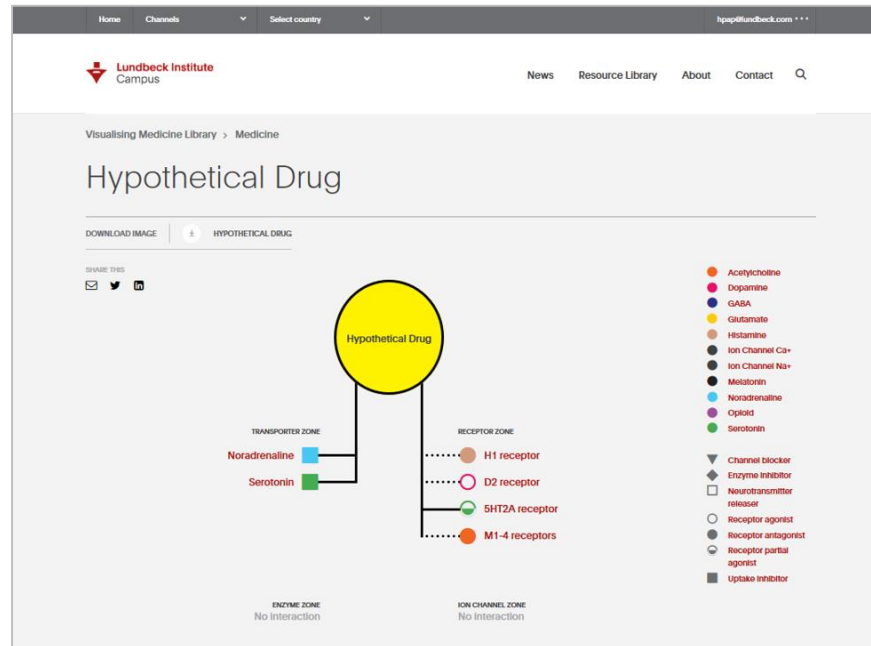
### Slide Library:

- A comprehensive collection of presentation slides for your learning and teaching needs



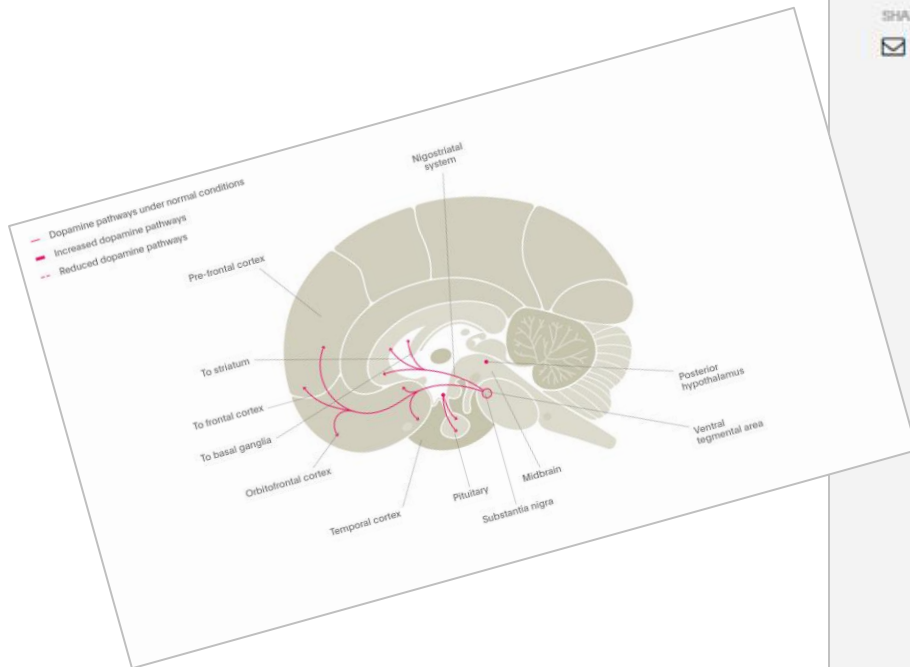
# Visualizing Medicine Library

## CNS medicines Mode of action



# Image Bank

## Downloadable images



## Image Bank

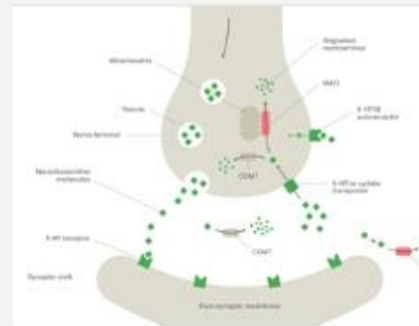
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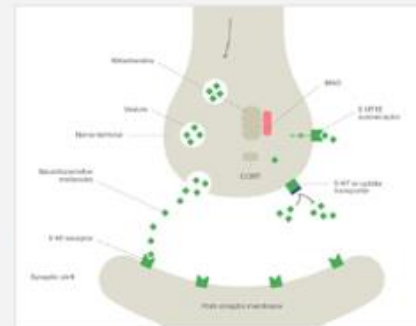
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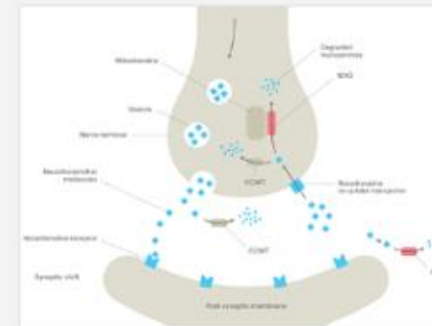
DEPRESSION - 10.05.2016  
IMAGE BANK

The normal process of 5-HT synaptic activity



DEPRESSION - 10.05.2016  
IMAGE BANK

The mechanism of action of selective serotonin re-uptake inhibitors (SSRIs)



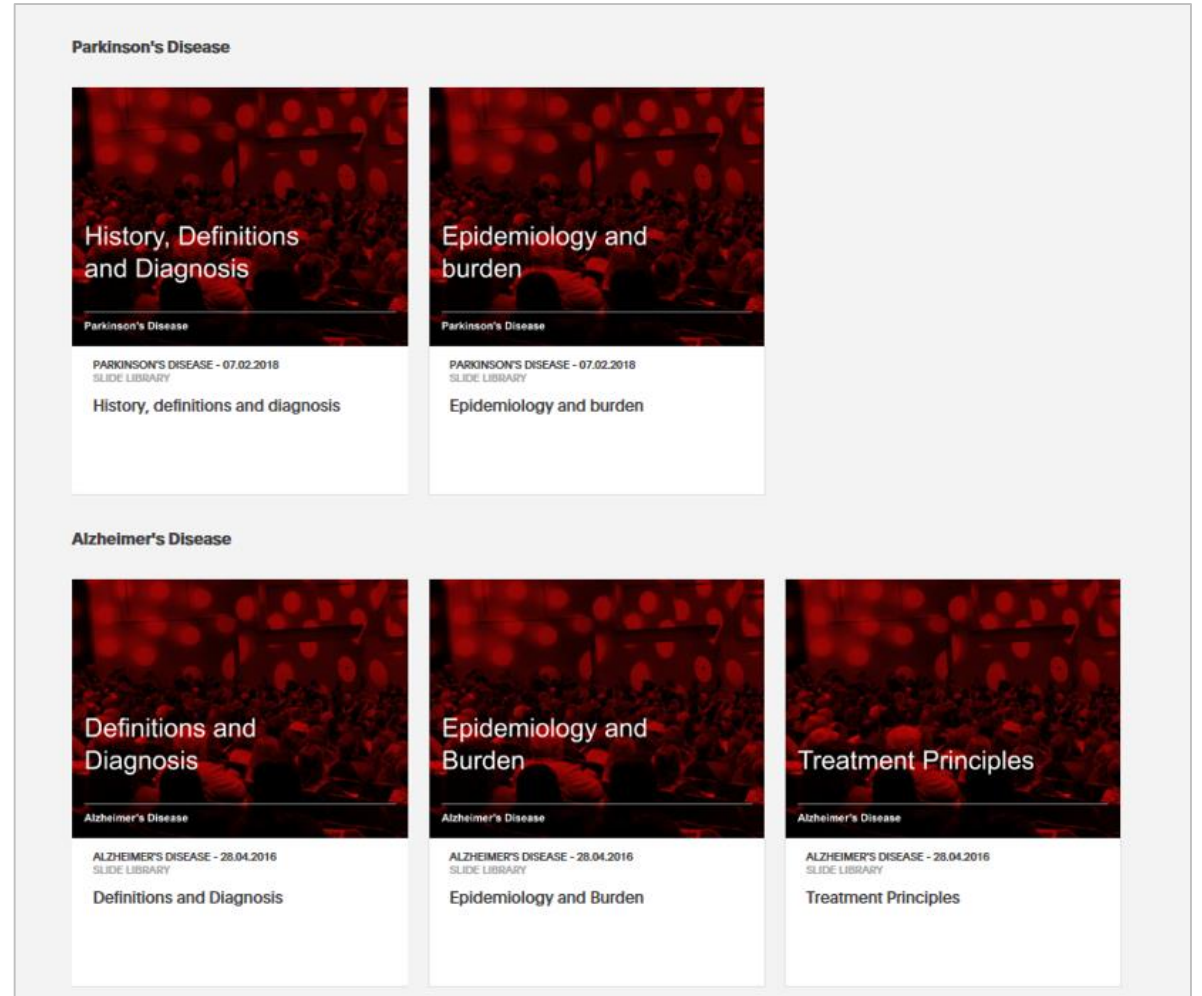
DEPRESSION - 10.05.2016  
IMAGE BANK

The normal process of noradrenaline synaptic activity

# Slide Library


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Collection of presentation slides




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## Features




**MENTAL HEALTH** - 22.02.2018  
FEATURE

### Brain imaging for psychiatrists




**SCHIZOPHRENIA** - 08.01.2018  
FEATURE

### Right treatment at the right time: The 'RAISE' project in first episode psychosis




**DEPRESSION** - 27.11.2017  
FEATURE

### Light in the darkness: Combating the mid-winter blues



**01.04.2017**  
FEATURE

### Big Data in Healthcare



**MENTAL HEALTH** - 07.03.2017  
FEATURE

### Genetic and Environmental Impact on Psychiatric and Neurological Disease



**SCHIZOPHRENIA** - 27.10.2016  
FEATURE

### Sleep and schizophrenia are intimately linked



**SCHIZOPHRENIA** - 01.06.2016  
FEATURE

### Schizophrenia across cultures



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Depression, Bipolar & Schizophrenia

Genetic and Environmental Impact on Psychiatric and Neurological Disease

DATE PUBLISHED  
Mental health - 07.03.2017

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The burden of brain disease in Europe continues to rise. Commonly, more than one in three individuals in Europe suffers from a disorder of the brain.<sup>1</sup> Brain diseases carry with them an estimated yearly economic burden of 789 billion Euro,<sup>2</sup> placing a considerable burden on personal, social, and economic well-being. Globally, mental disorders account for a disproportionately large percentage of disability-adjusted life years (54.7%) followed by neurological disorders (28.6%),<sup>3</sup> illustrating the deleterious effects these disorders place on the individual and society. Efforts to reduce this burden have led to a multi-disciplinary collaboration between the neurosciences, sociologists, clinicians, and public health officials, with a particular focus on the interplay between genetics and the environment, often referred to as "nature versus nurture", in the development of these diseases.

Gaining a better understanding of the causal risk factors associated with psychiatric and neurological disease may aid in efforts to prevent the development of these often disabling conditions and subsequently reduce this burden overall.

Dr. Andreas Meyer-Lindenberg addresses the need and potential approach one could undertake to better understand and potentially prevent the development of these disorders.

Genetics and the Environment: Disease Development and Course

The interplay between genetics (nature) and the environment (nurture) in the development and course of a disease has long been studied, however, it has not been until recent history that a comprehensive genomic analysis has been feasible from a financial perspective to perform. While the cost of performing a whole genome sequence (WGS) was over \$3 billion USD 13 years ago, it can now be accomplished in under two weeks for less than \$1,000 USD.<sup>4</sup> WGS may help both researchers and clinicians to understand the complex molecular systems that impact health, disease, and drug response and subsequently function as a key driver of psychiatric neuroscience.<sup>5</sup>

While genomics may lead to a better understanding of the heritability of some disease states, the degree to which one's genetic disposition and one's environment influences the development of psychiatric and neurological disorders varies across individuals, disorders, and a number of other factors.<sup>6</sup> The development of psychiatric disease is dependent on the degree to which a range of genetic, environmental and psychological risk factors interact in any given individual.<sup>7,8,9</sup> In general, for individuals with low genetic risk of developing a disorder, a high level of exposure to environmental risks is required to trigger the development of the disease whereas for individuals with a high degree of genetic susceptibility to the development of disease, a lower level of exposure to environmental risks may be required to trigger the onset of disease.

Although it is possible that a small number of genes might directly influence the pathogenesis of disease, it is more likely that the relevant genes influence a range of genetically influenced intermediate characteristics that subsequently affect the risk for the development of a disorder.<sup>7</sup>

Stress and the city

Share information

References

There are a number of environmental risk factors which have been shown to have an impact on mental health and, in particular, stress processing. Core environmental risk factors include being born or living in an urban environment or one's regulatory status. However, other risk factors include social factors such as socioeconomic status, perceived social status and social isolation.

Recent neuroimaging research aided in better understanding these risk factors in relation to neural processing.

Urbanicity

Cities are a synthesis of growth and opportunity and understanding the impact of cities on human life is of vital importance given the rapid migration of people to cities throughout the world. In 2014, 54% of the world's population lived in cities. By 2050, that number is expected to grow to include 66% of the world's population, meaning that two out of every three individuals will live in an urban environment.<sup>10</sup> There are many positive aspects of living in a city and certainly good reasons for moving from a rural home to a city environment. In general and from public health perspective, individuals who live in cities have seen a greater increase in their life expectancy over the past 40 years than those in rural areas due to lower rates of heart disease, diabetes, lung cancer, stroke, and suicide.<sup>11</sup> All of this is clearly positive.

Those who are born and spend their first year of life in a city are two to three times more likely to develop schizophrenia than those born in rural environments.<sup>12,13</sup>

While the statistics regarding physical health conditions are encouraging for those living in urban environments, the situation in regard to mental health problems for those born or living in cities is less positive. To the contrary, rural residents have been shown to have lower rates of chronic mental health problems, including depressive and anxiety disorders, compared to their urban counterparts.<sup>14,15</sup> Further, a perplexing and troubling statistic exists in regard to the mental health status of urbanites: those who are born and spend their first year of life in a city are two to three times more likely to develop schizophrenia than those born in rural environments.<sup>17,18,19</sup>

While the available evidence suggests that the environmental risk associated with living in a city and developing schizophrenia is conditional upon genetic factors,<sup>20</sup> parsing out which risk factors are associated with living in an urban environment and the development of mental disorders is important and has proven to be more difficult. Given the rapid expansion of cities globally, achieving an understanding of the neural processes by which these associations occur may help to temper and prevent their onset.

Living in a city can have an impact on mental health

Through the use of the neurosciences, researchers have sought to answer some of these questions through the identification of neural processing differences in urban versus rural dwellers. A relatively recent initiative has focused on the identification of factors correlated with higher levels of stress in those born and living in cities. In order to examine neural processing in urbanites,



# Summary

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## Lundbeck Institute

### Activities

- ✓ Non-product related
- ✓ Evidence-based knowledge
- Seminars
- Publications
- Resource Library

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