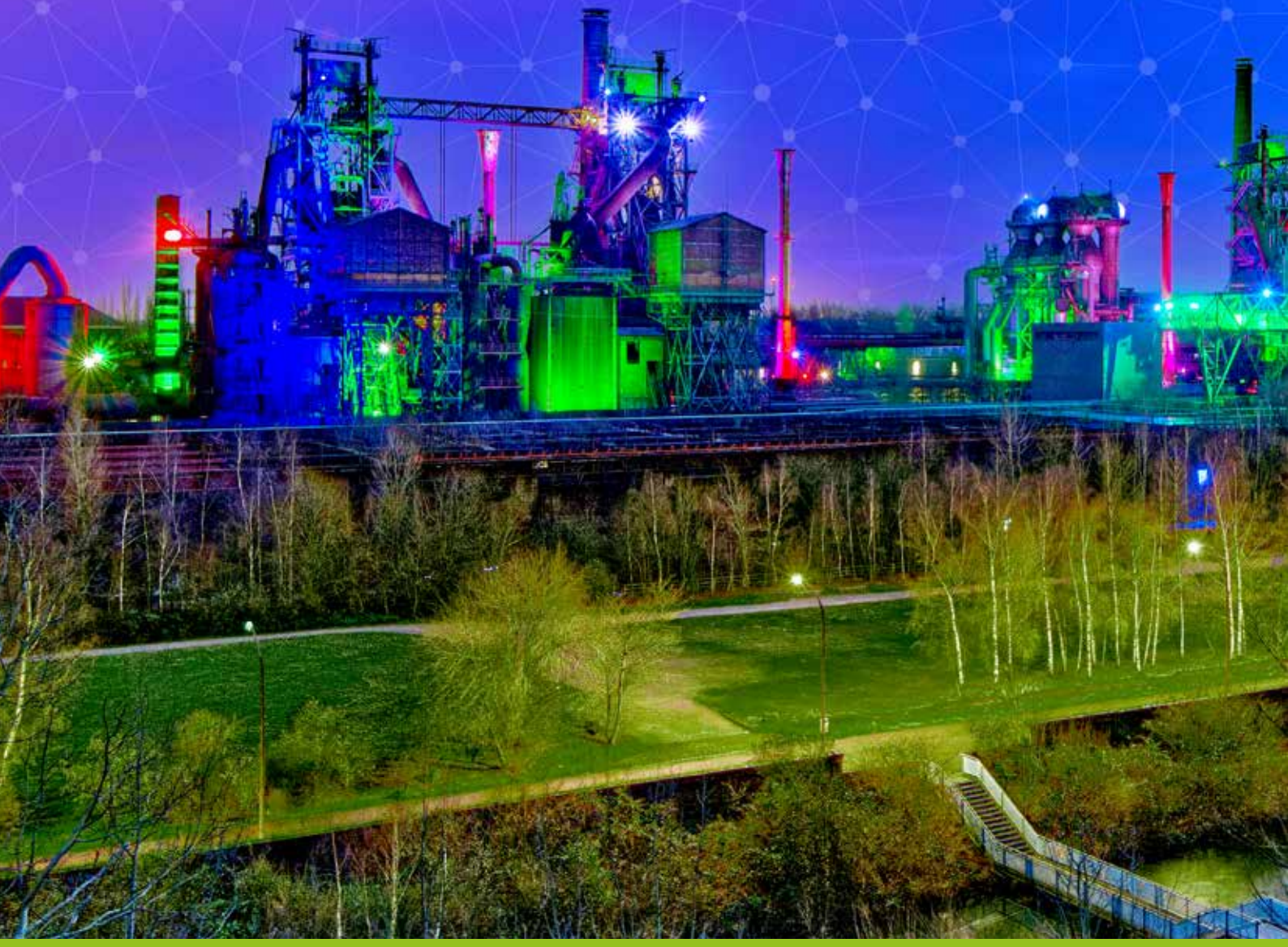
PROGRAM OF THE

4th International Conference

of the Society for Interdisciplinary Placebo Studies (SIPS)

10 – 13 May, 2023 – Meet us in Duisburg, Germany



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Conference Schedule 2023

Conference Schedule 2023

Wednesday, 10 May

*All talks and sessions except for Workshop 2 and 4 will take place in the **Theater Hall**. Workshops 2 (Friday) and 4 (Saturday) will be given in the* **Foyer**.

12:20 – 14:00		**Registration**
14:00 – 14:20		**Opening**
14:20 – 15:55	Theater Hall	**Plenary Session I** **„Computational and Psychological Mechanisms Underlying Placebo Effects“** ***Chair:*** *Christian Büchel* ***Speakers:*** *Philipp Sterzer* *Klaas Enno Stephan (virtual)* *Tor Wager*
15:55 - 16:30	Theater Hall	**Datablitz I** ***Speakers:*** *Jana Aulenkamp* *Friederike Thams* *Rotem Botvinik-Nezer* *Nick Augustat* *Justyna Braczyk*
16:30 - 17:00		**Coffee Break**
17:00 - 18:30	Theater Hall	**Plenary Session II** **„Animal Models in Placebo Research“** ***Chair:*** *Harald Engler* ***Speakers:*** *Sydney Trask* *Gregory Corder* *Asya Rolls (virtual)*
18:30 - 19:00	Theater Hall	**Datablitz II** ***Speakers:*** *Aleksandrina Skvortsova* *Maria Willadsen* *Kirsten Dombrowski* *Laura Heiß-Lückemann*
19:00 - open end		**Welcome Reception**

Conference Schedule 2023

Thursday, 11 May

09:00 – 10:30	Theater Hall	**Special Spotlight Session** **„Nocebo and Covid“** ***Chair:*** *Winfried Rief* ***Speakers:*** *Keith Petrie* *Andrew Geers* *Liron Rozenkrantz* *Lauren Heathcote* *Arianna Bagnis*
10:30 – 11:00		**Coffee Break**
11:00 – 12:15	Theater Hall	**Plenary Session III** **„Placebo Effects in Clinical Trials“** ***Chair:*** *Luana Colloca* ***Speakers:*** *Luana Colloca* *Nanna Finnerup* *Peter Schüler*
12:15 - 12:55	Theater Hall	**Datablitz III** ***Speakers:*** *Amke Müller* *Maria Lalouni* *Moa Ponten* *Stefan Schmidt*
13:00 - 14:30		**Network Lunch**
13:00 - 14:30	Machine Foyer	**Poster Session I** **No.: 001-060**
14:30 - 16:00	Theater Hall	**Plenary Session IV** **„Patient Physician Interaction and Communication“** ***Chair:*** *Andrea Evers* ***Speakers:*** *Vitaly Napadow* *Karin Jensen* *Lisbeth van Vliet*
16:00 - 16:30	Theater Hall	**Datablitz IV** ***Speakers:*** *Anna Seewald* *Dasha Sandra* *Justine Schmidt* *Arvina Grahl*
16:30 – 17:00		**Coffee Break**
17:00 - 18:00	Theater Hall	**Keynote Lecture** **Lisa Feldmann Barrett (virtual)**
18:00 - 19:00	Theater Hall	**Science Slam** ***Speakers:*** *Livia Asan* *Kari Leibowitz* *Lukas Basedow* *Ayah Ismail* *Elif Buse Caliskan* *Philip Hurst* *Stefanie Hölsken*

Conference Schedule 2023

Friday, 12 May

08:30 - 10:00	Theater Hall	**Plenary Session V** **„Social Aspects of Placebo Effects“** ***Chair:*** *Ben Colagiuri* ***Speakers:*** *Siri Leknes* *Przemysław Bąbel* *Claus Lamm*
10:00 - 10:30	Theater Hall	**Datablitz V** ***Speakers:*** *Antonia Borcherding* *Charlotte Krahe (virtual)* *Ilenia Ceccarelli* *Stefanie Meeuwis*
10:30 - 11:00		**Coffee Break**
11:00 - 12:30	Theater Hall	**Workshop I** **„Contextual Factors and Predictors of Placebo Effects“** ***Chair:*** *Manfred Schedlowski* ***Speakers:*** *Kathryn Hall / Ed Bowen (virtual)* *A Vania Apkarian* *Dan-Mikael Ellingsen* *Lukas Basedow* *Lauren Howe*
11:00 - 12:30	Foyer	**Workshop II** **„Open-label Placebo Effects and Studies in Children“** ***Chair:*** *Katja Weimer* ***Speakers:*** *J. Leon Morales-Quezada* *Christiane Hermann* *Henriet van Middendorp* *Anne Schienle* *Sarah Buergler* *Antje Frey Nascimento*
12:30 - 14:00		**Network Lunch**
12:30 - 14:00	Machine Foyer	**Poster Session II** **No.: 061-115**
14:00 - 15:00	Theater Hall	**Keynote Lecture** **„Lifetime Achievemet Award“**
15:00 - 16:15	Theater Hall	**Plenary Session VI** **„Open-label Placebo: A Cirtical Evaluation“** ***Chair:*** *Ulrike Bingel* ***Speakers:*** *John Kelley* *Ted Kaptchuk (virtual)* *Julia Haas*
16:15 - 16:50	Theater Hall	**Datablitz VI** ***Speakers:*** *Kirsten Barnes* *Marco Valerio* *Octavia Zahrt* *Biya Tang* *Matthijs de Leeuw*
16:50 – 19:00		**Time for Social Activities**
19:00 – open end	Pump Hall	**Gala Dinner**

Conference Schedule 2023

Saturday, 13 May

09:00 - 10:30	Theater Hall	**Workshop III** **„Placebo Effects in Clinical Studies“** ***Chair:*** *Julian Kleine-Borgmann* ***Speakers:*** *Yvonne Nestoriuc* *Regine Klinger* *David Hohenschurz-Schmidt* *Melissa Boswell* *Jeremy Howick* *Sophie Rosenkjaer*
09:00 - 10:30	Foyer	**Workshop IV** **„Animals and Basic mechanism“** ***Chair:*** *Tamas Spisak* ***Speakers:*** *Martin Hadamitzky* *Damien Boorman* *Gregory Scherrer* *Helena Hartmann / Tamas Spisak* *Marie Habermann*
10:30 - 11:00		**Coffee Break**
11:00 - 12:00	Theater Hall	**Plenary Session VII** **„Placebos beyond the horizon“** ***Chair:*** *Yvonne Nestoriuc* ***Speakers:*** *Alia Crum* *Philip Hurst*
12:00 - 12:30	Theater Hall	**Datablitz VII** ***Speakers:*** *Roni Shafir* *Jana Kraft* *Sigrid Juhl Lunde* *Jens Gaab*
12:30 – 12:50	Theater Hall	**ECRs Awardees**
12:50 – 13:15		**Closing Remarks**

All talks and sessions except for Workshop 2 and 4 will take place in the ***Theater Hall****. Workshops 2 (Friday) and 4 (Saturday) will be given in the* **Foyer**.

Plenary Session I

Wednesday, 10 May
14:20 – 15:55
Theater Hall

PLENARY SESSIONS

PLENARY SESSION I

Wednesday, 10 May | 14:20 – 15:55 | Theater Hall

Computational and Psychological Mechanisms Underlying Placebo Effects

Christian Büchel, Prof.

University Medical Center
Hamburg-Eppendorf Germany

Chair and introduction

Christian Büchel is a Professor for Cognitive Neuroscience and the Director of the Department for Systems Neuroscience at the University Medical Center Hamburg-Eppendorf in Germany. He investigates how higher cognitive processes such as learning are anchored in functional connections of the brain. His lab is mainly interested in pain, fear and decision making. Christian aims to identify mechanisms behind these phenomena using a multi-level approach: analysis of behavior and autonomic responses, computational modeling of the underlying algorithmic and neural processes, multimodal neuroimaging (fMRI and EEG) of these processes, and pharmacological cHallenges to investigate the causal role of specific neurotransmitter systems. His work not only contributes to our understanding of basic neuroscience mechanisms, but also provides novel ideas and approaches in clinical neuroscience, which could eventually improve prevention, diagnosis, prognosis and disease progression assessment in neuropsychiatric disorders including chronic pain.

Twitter: @C_Buchel
Website: https://sites.google.com/view/buechellab/home

PLENARY SESSIONS

PLENARY SESSION I

Wednesday, 10 May | 14:20 – 15:55 | Theater Hall

Priors, perception, and psychosis

Philipp Sterzer, Prof. Dr. med.

Department of Psychiatry and Neurosciences at
the Charité Campus Mitte, Berlin, Germany

Abstract description

There has been an increasing interest in the neurocomputational mechanisms underlying psychotic disorders in recent years. One promising approach is based on the theoretical framework of predictive processing, which proposes that inferences regarding the state of the world are made by combining prior beliefs with sensory signals. Delusions and Hallucinations are the core symptoms of psychosis and often co-occur. Yet, different predictive-processing alterations have been proposed for these two symptom dimensions, according to which the relative weighting of prior beliefs in perceptual inference is decreased or increased, respectively. I will present recent behavioural, neuroimaging, and computational work that investigated perceptual inference to elucidate the changes in predictive processing that may give rise to psychotic experiences. Based on the empirical findings presented, I will provide a more nuanced predictive-processing account that suggests a common mechanism for delusions and Hallucinations at low levels of the predictive-processing hierarchy, but still has the potential to reconcile apparently contradictory findings in the literature. This account may help to understand the heterogeneity of psychotic phenomenology and explain changes in symptomatology over time.

Bio

Philipp Sterzer is a psychiatrist, psychotherapist and a Professor of Psychiatry with a focus on Computational Neuroscience at the Charité in Germany.
He is dedicated to researching visual perception processes and their changes in mental disorders using functional imaging methods. Leveraging functional imaging methods such as tasl-based and resting-state fMRI, his work is specifically dedicated to the alteration of these visual perceptual processes in mental disorders, e.g. psychosis, depression, conduct disorder, and alcohol-use disorders. In his work, he also employs a predictive coding framework to understand his topics better.

PLENARY SESSIONS

PLENARY SESSION I

Wednesday, 10 May | 14:20 – 15:55 | Theater Hall

Computational Psychosomatics (virtual)

Klaas Enno Stephan, Prof.

University of Zurich and ETH Zurich, Switzerland

Abstract description

Common mental disorders, such as depression or anxiety, are frequently associated with chronic conditions in the somatic domain, e.g. fatigue or pain. New approaches to diagnosis and treatment of complex combined (mental+somatic) conditions are required. Recently, computational concepts originating from a “Bayesian brain“ perspective offer a novel perspective on how problems of mental and somatic health results from disturbances of brain-body interactions. This computational perspective highlights the close connection of mental health to how the brain perceives bodily states (interoception), elicits reactive and anticipatory actions to control bodily states (homeostatic/allostatic control), and monitors its own capacity of control (metacognition). Furthermore, this perspective provides a framework for developing new experimental interventions and computational assays as clinical tools.

Bio

Klaas Enno Stephan is a Professor for Translational Neuromodeling & Computational Psychiatry at the University of Zurich and ETH Zurich in Switzerland.
His scientific work covers the entire translational pipeline, from the development of disease theories via the creation of computational methods to their application in clinical studies. One of his central goals is the development of clinically useful "computational assays" for psychiatry and psychosomatics. Based on generative models of brain activity and behavior, his hope is that such assays will support more precise diagnostics and individualized treatment recommendations, leading to a transformation of clinical practice and redefinition of mental diseases. His track record includes pathophysiological theories of schizophrenia, fatigue and depression, the development of open source and widely used computational tools (e.g., for investigating brain connectivity and Bayesian model selection) as well as numerous studies on psychiatric and psychosomatic disease mechanisms.

Website: https://www.tnu.ethz.ch/en/team/faculty-and-scientific-staff/stephan

PLENARY SESSIONS

PLENARY SESSION I

Wednesday, 10 May | 14:20 – 15:55 | Theater Hall

Tor Wager, Prof.

Department of Psychological and Brain Sciences
at the Dartmouth College, New Hampshire, USA

Bio

Tor Wager is director of the Cognitive and Affective Control Laboratory and Diana L. Taylor Distinguished Professor in Neuroscience at Dartmouth College. His research focuses on the neurophysiology of affective processes such as pain, emotion, stress, and empathy - and how their expression is influenced by cognitive and social influences. Also, Dr. Wager and his lab are dedicated to developing analytical methods for functional neuroimaging and sharing ideas, tools, and scientific data with the scientific community and the public.

Website:
https://pbs.dartmouth.edu/people/tor-wager
https://sites.dartmouth.edu/canlab/people/tor-wager/

Datablitz Session I

Wednesday, 10 May
15:55 - 16:30
Theater Hall

DATABLITZ SESSIONS

DATABLITZ I

Wednesday, 10 May | 15:55 - 16:30 | Theater Hall

Computational and Psychological Mechanisms Underlying Placebo Effects

Jana Aulenkamp

Negative pain-related expectations shape the presence and the future: Unraveling modality-specific nocebo mechanisms in experimental visceral versus somatic pain

Dynamic changes in negative expectations underlying nocebo effects in visceral pain remain incompletely understood. In model of repeated pain experiences from the visceral and somatic modalities, we elucidated modality-specific expectations, experience and pain recall in healthy volunteers.Visceral (rectal distensions) and somatic pain (thermal pain applied to abdomen) stimuli were matched to perceived intensity. On two study days (7 days apart) a pseudorandomized series of stimuli from both modalities was implemented. Negative pain-related expectations were greater for the visceral modality, and visceral pain was experienced as more intense and unpleasant (trial-by-trial ratings). Visceral pain recall at end of day 1 was more negative, and correlated with greater negative visceral pain-related expectations 1 week later. While pain experience on day 1 was not associated with expectations on day 2 for visceral modality, pain experience and future expectations matched for somatic modality. Dynamic changes in pain-related negative expectations are modality-specific, suggesting distinct and more pronounced modulation of visceral pain by nocebo effects. Biased short-term pain recall may trigger long-term expectation bias, with implications for chronic visceral pain.

DATABLITZ SESSIONS

DATABLITZ I

Wednesday, 10 May | 15:55 - 16:30 | Theater Hall

Computational and Psychological Mechanisms Underlying Placebo Effects

Friederike Thams

Attention and prefrontal regulation modulate positive treatment effects on emotional processing

Positive treatment expectations substantially influence treatment outcomes. This highly potent placebo effect has been shown in the context of pain as well as in the emotional domain with regard to antidepressant-treatment outcomes. Here, we are interested in attentional top-down modulation of beneficial treatment expectation effects in the affective system. We performed a controlled cross-over study using positive expectation induction for alleged intranasal oxytocin treatment in N = 49 healthy participants who completed an attentional emotion-interference task (modified Posner paradigm) during functional magnetic resonance imaging. Behavioral findings show an enhanced bias toward positive versus negative stimuli during the positive expectation compared to the control condition. This effect emerged only when the attention to emotional stimuli was high. The effect was paralleled by neural activations in cognitive control network regions such as the dorsolateral prefrontal cortex. Taken together our results indicate that affective treatment effects are modulated by attentional control and higher-order prefrontal regulation.

Funding: We gratefully acknowledge funding from the German Research Foundation (DFG) - Project-ID 422744262—TRR 289.

DATABLITZ SESSIONS

DATABLITZ I

Wednesday, 10 May | 15:55 - 16:30 | Theater Hall

Computational and Psychological Mechanisms Underlying Placebo Effects

Rotem Botvinik-Nezer

The integration of multiple social cues into expectations and their effect on perception in pain and vision

Expectations about upcoming stimuli shape their perception. When integrating over multiple cues, the mean value across cues has been shown to shape expectations and subsequent perception. Some studies have found that this effect is weaker when the variance (uncertainty) across cues is higher, in accordance with a Bayesian predictive-coding framework, but others have found that uncertainty increases pain irrespective of the mean cue value or has no effect. To test whether these mixed findings result from over-weighting of extreme pain cues, N=45 participants were presented with 10 simultaneous lines indicating purported ratings by other participants, followed by either a hot stimulus or a flickering checkerboard with varying intensities. The mean, variance and skewness of the cues were experimentally manipulated. Expectation and perception were indeed higher following cues with higher mean value, but effects of variance were weak. Computational models revealed that more fine-grained features of the distribution matter: Healthy young adults overweight outliers in both modalities, and also smaller values, specifically in pain. fMRI data revealed that expectation-related effects are a combination of modality-specific and modality-general processes. Our results explain previous mixed findings regarding the variance based on over-weighting of extreme values.

DATABLITZ SESSIONS

DATABLITZ I

Wednesday, 10 May | 15:55 - 16:30 | Theater Hall

Computational and Psychological Mechanisms Underlying Placebo Effects

Nick Augustat

Uncertainty enhances treatment expectation effects on reinforcement learning

The placebo-reward hypothesis suggests that placebo and reward processing share similar cognitive resources. Moreover, experiments in humans and animals indicate that uncertainty enhances striatal dopamine, which is presumably involved in placebo responses and reward learning. Therefore, the probability of receiving active treatment may affect reward learning after placebo treatment. Here, we address whether different degrees of uncertainty regarding the efficacy of a sham treatment affect reward learning. In an online between-subjects experiment with N = 141 participants, we systematically varied the provided efficacy instructions (0-100% in steps of 25%) before participants first received a sham treatment that consisted of listening to binaural beats and then performed a probabilistic reinforcement learning task. We fitted a Q-learning model including two different learning rates for positive (gain) and negative (loss) prediction errors and an inverse gain parameter to behavioral decision data in the reinforcement learning task. Our results yielded an inverted-U-shape relationship between provided treatment efficacy probability and learning rates for gain, suggesting that treatment uncertainty, rather than net efficacy, affects presumably dopamine-related reward learning. These findings support the placebo-reward hypothesis and suggest harnessing uncertainty in placebo treatment in order to recover reward learning capabilities.

DATABLITZ SESSIONS

DATABLITZ I

Wednesday, 10 May | 15:55 - 16:30 | Theater Hall

Computational and Psychological Mechanisms Underlying Placebo Effects

Justyna Braczyk

The effectiveness of medically and non-medically connoted placebos in inducing placebo hypoalgesia by operant conditioning

Recent studies have shown that placebo hypoalgesia can be induced by operant conditioning. The aim of the study is to compare the placebo hypoalgesia induced by operant conditioning with the use of medically and non-medically connoted placebo. Participants will be randomly allocated to one of the two experimental groups: medically connoted placebo, non-medically connoted placebo; and three control groups: random medically connoted, random non-medically connoted, natural history. In the medically connoted placebo groups, a TENS device alleged activation will serve as placebo intervention. In non-medically connoted placebo groups, a white circle on the screen will be a placebo. In both experimental groups, in the operant conditioning phase, during every series of electrical stimulation participants will have an option: to take or reject the placebo. If they choose the placebo, they will be reinforced with lowered pain intensity. If they choose to reject the placebo, the pain intensity will stay at the same level. In the posttest phase, participants will still have the choice between taking or rejecting the placebo, however no reinforcement will be distributed. The data collection is ongoing, and the results will be presented during the conference.

Plenary Session II

Wednesday, 10 May
17:00 – 18:30
Theater Hall

PLENARY SESSIONS

PLENARY SESSION II

Wednesday, 10 May | 17:00 – 18:30 | Theater Hall

Animal Models in Placebo Research

Harald Engler, Prof.

Institute of Medical Psychology and Behavioral Immunobiology, Essen University Hospital, Germany

Chair and introduction

Harald Engler is a Professor for Behavioral Immunobiology at the Institute of Medical Psychology and Behavioral Immunobiology, Essen University Hospital in Germany. The focus of his translational research is in the field of behavioral immunobiology and psychoneuroendocrinology. Together with his research group, he focuses on functional interactions between the peripheral immune system and the central nervous system in animal and human experiments and investigates their importance for the control of behavior and mental processes. A particular focus is on afferent and efferent communication pathways and the influence of inflammation on cognitive and affective processes. The goal of his research is a better understanding of molecular and neurobiological mechanisms relevant for the maintenance of mental health and for the development of neuropsychiatric diseases such as depression or schizophrenia.

Website: https://medizinische-psychologie.uk-essen.de/index.php/de/institut/team/36-mitarbeiter/62-harald-engler

PLENARY SESSIONS

PLENARY SESSION II

Wednesday, 10 May | 17:00 – 18:30 | Theater Hall

Animal Models in Placebo Research
Contextual control of conditioned pain tolerance:
A sex-dependent role for perineuronal nets.

Sydney Trask, PhD

Department of Psychological Sciences,
Purdue University, USA

Abstract description

Environmental context was recently described as a critical regulator of pain memory; both rodents and humans exhibit increased pain sensitivity in environments recently associated with a single painful experience. Previous work has also demonstrated that a context associated with presentation of a painful stimulus (e.g., a shock) in fear conditioning paradigms can cause a conditioned analgesia to develop in the presence of those contextual cues. It is unknown however, how repeated exposure to a painful stimulus in a distinct context modifies pain expression in that environment. To answer this question, we conditioned mice to associate distinct contexts with either repeated administration of a mild visceral pain stimulus (intraperitoneal injection of acetic acid) or vehicle injection over the course of three days. On the fourth day, animals received acetic acid injection in both the acid-trained and vehicle-trained chamber and were tested for mechanical sensitivity in each context. Both female mice and male mice develop a conditioned pain tolerance in this paradigm. We then showed that this effect is mediated endogenous opioid signaling and supported by different molecular mechanisms in males and females within the anterior cingulate cortex and the periaqueductal gray. Specifically, while males show tolerance-dependent decreased expression of perineuronal nets in the ACC, females show the opposite effect. Only males show elevated PNN expression within the PAG, however. Interestingly, tolerance was associated with decreased neural activity in each region in both males and females. These experiments suggest that pain-associated memory engages endogenous

opioid systems to create a context-dependent conditioned compensatory response for painful stimuli.

Bio

Sydney Trask is an Assistant Professor for Neuroscience and Behavior at the Department of Psychological Sciences at Purdue University in the US. She is interested in the ways the brain encodes, stores, retrieves, and updates memory, particularly in understanding memory for context, or the environment in which events take place. “Successful encoding and retrieval of context allows us to select and guide our behavior in a way that encourages situationally appropriate responding. However, alterations in this type of learning and memory are common in symptomology that underlies several neuropsychiatric disorders, ranging from PTSD to age-related dementia. Understanding how memory for context is formed, retrieved, and altered at both the circuit and molecular level, will provide one crucial step forward to treatments aimed at reducing maladaptive behaviors stemming from contextually inappropriate behaviors.

Twitter: @Sydney_Trask
Website: https://www.purdue.edu/hhs/psy/directory/faculty/Trask_Sydney.html

PLENARY SESSIONS

PLENARY SESSION II

Wednesday, 10 May | 17:00 – 18:30 | Theater Hall

Animal Models in Placebo Research

Expectation-driven calibration of nociceptive dynamics in midbrain opioidergic circuits

Gregory Corder, PhD

Department of Psychiatry and Department of Neuroscience, Perelman School of Medicine, University of Pennsylvania, Philadelphia

Abstract description

Opioid analgesics and endogenous peptides engage mu opioid receptor (MOR) signaling across multiple brain regions to alleviate pain. Notably, the ventrolateral periaqueductal gray (vlPAG) plays a dual functional role for both nociceptive processing and robust antinociception. However, the molecular identity, signaling dynamics, and plasticity of MOR+ neurons in vlPAG, as well as their role in pain and endogenous analgesia, remains unclear. Here, we characterized the nociceptive MOR+ neural populations in the vlPAG to gain insight into the molecular markers and temporal dynamics that define this functional ensemble. To this end, we employed mouse and viral genetic approaches to capture, monitor, and manipulate vlPAG cell-types at the intersection of nociception and molecular MOR expression across acute and inflammatory pain states. Using the targeted recombination in active populations (TRAP) approach, we found a gradient in pain-active vlPAG neurons that increased posteriorly, suggesting spatial heterogeneity in vlPAG with respect to pain processing. Next, we distinguished molecular markers of pain-active vlPAG MOR+ neurons, such as Vglut2 and Vgat, while further defining the projection targets of MOR+ cells using TRAP. Capitalizing on a MOR promoter-driven viral vector, we used in vivo fiber photometry imaging to record calcium transient activity reported by fluorescence of the genetically encoded calcium indicator GCaMP6f in MOR+ vlPAG neurons. With this approach, we discovered that vlPAG MOR+ neurons broadly demonstrate increased calcium activity in response to acutely noxious stimuli that was suppressed by morphine. Additionally, calcium activity in this population

was enhanced following induction of Complete Freund's Adjuvant inflammatory pain. In contrast to the MOR+ population, optogenetic activation of enkephalinergic interneurons in vlPAG produced antinociception during hotplate exposure indicating a potential local microcircuit that blunts the activity of nociceptive MOR+ neurons and associated pain behavior. Next, to assess endogenous opioid analgesia, we developed a novel non-pharmacological placebo model that utilizes instrumental conditioning to drive expectation-mediated analgesia. In our optimized endogenous analgesia conditioning (EAC) paradigm, we found that EAC mice prefer to spend significantly more time in the formerly innocuous paired context and display attenuated nocifensive behaviors, compared to non-conditioned controls, which correlated with reduced population calcium activity of MOR+ vlPAG neurons. Thus, the EAC model combined with cell-type specific viral tools for genetic access to opioidergic neural circuits serves as a strong platform to investigate the malleable nature of pain perception in preclinical pain models.

Bio

Gregory Corder is an Assistant Professor at the Department of Psychiatry and Department of Neuroscience, Perelman School of Medicine, University of Pennsylvania, Philadelphia.

Gregory's research has aimed to uncover how brain and spinal cord circuitry converts emotionally sluggish nociceptive information into an affective painful experience. He has based his scientific interest on studying the fundamental properties of nerve circuits and how best to advance translational efforts to develop novel strategies for clinical pain relief. Gergory's group is taking a comprehensive multidisciplinary approach to advance our understanding of how brain processes give rise to perceptions and motivations caused by endogenous and exogenous opioids in the brain's limbic and cortical circuits. The aim of their projects is to improve the mental, physical and social health of patients with chronic pain.

Website: https://corderlab.com/

PLENARY SESSIONS

PLENARY SESSION II

Wednesday, 10 May | 17:00 – 18:30 | Theater Hall

Animal Models in Placebo Research (virtual)
Immunoception: brain representation and control of immunity.

Asya Rolls, PhD

Immunology and Center of Neuroscience at Technion within the Israel Institute of Technology

Abstract description

The brain constantly monitors the activity of the different physiological systems to form an updated image of one's state, a phenomenon known as interoception. This image is then used to regulate the organism's systems and maintain its internal balance. Immune activity is a critical component indicative of the internal state and a key executive arm, which is required to restore tissue homeostasis. I will discuss how the brain stores immune-related information and how it uses such information to regulate immunity. I will mainly focus on two central systems, the reward system, and the insular cortex.

Bio

Aysa Rolls is a psychoneuroimmunologist, International Howard Hughes Medical Institute Investigator and an Associate Professor at the Immunology and Center of Neuroscience at Technion within the Israel Institute of Technology. The focus of her team is to explore how the nervous system affects immune responses and thus physical health. Her recent work has highlighted how the brain's reward system is implicated in the placebo response and how brain-immune interactions can be harnessed to find and destroy tumors.

Website: https://rolls.net.technion.ac.il/

Datablitz Session II

Wednesday, 10 May
18:30 – 19:00
Theater Hall

DATABLITZ SESSIONS

DATABLITZ II

Wednesday, 10 May | 18:30 – 19:00 | Theater Hall

Animal Models in Placebo Research

Aleksandrina Skvortsova

The role of cholecystokinin in nocebo hyperalgesia in mice.

Conditioned hyperalgesia was found in mice and humans after a pairing of an environmental context with pain. This study investigated the neurochemical mediation of this phenomenon focusing on cholecystokinin (CCK), a neurotransmitter that affects nocebo hyperalgesia in humans.Post-operative pain was used as an unconditioned stimulus. Mice underwent an incision surgery on their paw. Right after the surgery they were placed in a particular testing context for 5 hours (conditioned stimulus). Testing day took place six days later, when the incision wound recovered. Mice were tested for mechanical pain sensitivity either in the same or in a different context. Additionally, mice received either CCK-2 antagonist LY-225910 (1 mg/kg) or saline immediately before the surgery and at the start of the test day. A significant increase in pain sensitivity was observed in saline-treated mice tested in the same context on the test day. This conditioned hyperalgesia was blocked by LY-225910. Mice tested in a new context did not exhibit hyperalgesia. One pairing of pain with context is enough to cause conditioned hyperalgesia in mice. LY-225910 blocks conditioned hyperalgesia, indicating that CCK-2 receptors are involved in mediating this phenomenon.

DATABLITZ SESSIONS

DATABLITZ II

Wednesday, 10 May | 18:30 – 19:00 | Theater Hall

Animal Models in Placebo Research

Maria Willadsen

Effects of positive and negative treatment expectation on antidepressant treatment efficacy in rats

In rats, juvenile social isolation leads to a depression-like phenotype. This rodent model of affective disorders in turn can be used to examine how positive vs. negative treatment experience as a function of the treatment context affects the placebo and nocebo responses compared to pharmacological treatment with selective serotonin reuptake inhibitors (SSRIs). Hereby, ultrasonic vocalizations (USV) are of special interest. For one, as a marker of affective states in general, and as indicator of altered emotional processing in depression-like phenotypes specifically. Different types of USV accompany a range of appetitive and aversive contexts, and their emission is known to be influenced by juvenile social isolation. A balanced placebo design is applied to test how positive and negative prior treatment experiences affect the response to placebo and pharmacological antidepressant treatment (SSRIs). Furthermore, treatment outcome is evaluated by several standard tests, e.g. open field and elevated plus maze. Preliminary results indicate context dependent effects on USV. In a series of experiments, it is investigated how positive vs. negative treatment experience (treatment context) affects the response to placebo and SSRIs, as assessed by depression-related behavioral phenotypes, such as ultrasonic vocalization deficits, social impairments, and anhedonia.

DATABLITZ SESSIONS

DATABLITZ II

Wednesday, 10 May | 18:30 – 19:00 | Theater Hall

Animal Models in Placebo Research

Kirsten Dombrowski

The bittersweet taste of sickness: induction of negative treatment expectation in an animal model of endotoxin-induced sickness

Despite broad clinical implications, the neurobiological mechanisms underlying negative treatment expectation are largely unknown. For ethical reasons, such mechanistic insights are difficult to obtain in humans. This calls for translational animal models that mimic clinically relevant features of negative treatment expectation. Here we present results from an animal model of endotoxin-induced sickness aimed at inducing a negative treatment expectation in rats.Using a conditioned taste aversion (CTA) paradigm, we combined the presentation of a novel taste (saccharin) with the injection of bacterial endotoxin as sickness-inducing agent. This was done either once, twice or three times, to vary the amount of learning experiences. After consolidation, animals were re-exposed to the taste alone, and the consumed amount of saccharin was quantified as a measure of the CTA. Additionally, neural activation markers (c-fos, arc) and stress hormone levels were assessed. Conditioned animals developed a pronounced CTA that was greater in individuals with more learning trials. Moreover, re-exposure to the taste stimulus induced a conditioned increase in plasma corticosterone levels.Our findings show successful induction of a negative treatment expectation as well as a conditioned stress response, which both were strongly correlated with the number of prior treatment experiences.

DATABLITZ SESSIONS

DATABLITZ II

Wednesday, 10 May | 18:30 – 19:00 | Theater Hall

Animal Models in Placebo Research

Laura Heiß-Lückemann

Effects of taste-immune associative learning on experimentally induced glioblastoma in rats

Mechanistic target of rapamycin (mTOR)-signaling is one key driver in glioblastoma (GBM) tumor growth by promoting the shift to an anti-inflammatory, pro-cancerogenic microenvironment. In fact, mTOR inhibitors such as rapamycin have been shown to interfere with GBM disease progression in both animal models and patients. However, therapy is frequently chaperoned by toxic drug side effects. Since latest findings document that taste-immune associative learning with rapamycin induces pharmacological placebo responses in the immune system, the present report analyzed its applicability in a syngeneic GBM rat model. Following repeated pairings of a novel gustatory stimulus and injections of therapeutically effective rapamycin (5 mg/kg), learned immunopharmacological effects were retrieved in GBM-bearing animals when re-exposed to the gustatory stimulus together with administering only 10 % amount of the initial drug dose (0.5 mg/kg). This procedure promoted the development of a pro-inflammatory, anti-tumor microenvironment thereby effectively prevented tumor growth to an almost identical outcome obtained after full dose treatment (5 mg/kg). This proof-of-concept study document that taste-immune associative learning strategies may be utilized as supportive treatment strategy, allowing the reduction of required drug doses and side effects without losing treatment efficacy.

Special Spotlight Session

Thursday, 11 May
9:00 – 10:30
Theater Hall

SPECIAL SPOTLIGHT SESSION

NOCEBO AND COVID

Thursday, 11 May | 9:00 – 10:30 | Theater Hall

Winfried Rief, Prof.

Philipps University Marburg, Germany

Chair and introduction

Winfried Rief is Professor of Clinical Psychology and Psychotherapy and heads the institute of the same name at Philipps University Marburg as well as the Psychotherapy Outpatient Clinic at Philipps University as a psychological psychotherapist and supervisor. Professor Rief's research focuses on somatoform dysfunction, placebo and nocebo effects, optimisation of clinical trials and interventions, as well as pain, eating disorders and anxiety disorders. He is a member of the WHO/APA Expert Commission on Classification of Mental Disorders according to DSM-V and co-chair of the WHO Working Group on Pain Diagnosis in ICD-11 and spokesperson for the supraregional DFG Research Group on Placebo and Nocebo Mechanisms as well as a DFG review board member.

Website: https://www.uni-marburg.de/de/fb04/team-rief/team/winfried-rief

SPECIAL SPOTLIGHT SESSION

NOCEBO AND COVID

Thursday, 11 May | 9:00 – 10:30 | Theater Hall

Nocebo or a City Poisoned?

Keith Petrie, PhD

Faculty of Health Psychology, University of Auckland, Australia

Abstract description

In Federal and State financial support, with over $1.2 billion in relief funds as well as a flurry of legal suits. Early reports attributed the increasing rates of special education enrolment and diagnoses of learning disabilities in Flint children to lead exposure from the Water Crisis. But was this conclusion justified? Working with a team of water engineers from Virginia Tech University, I try to unravel whether the worsening educational outcomes were due to lead poisoning, or one of the largest documented nocebo effects in American history.

SPECIAL SPOTLIGHT SESSION

NOCEBO AND COVID

Thursday, 11 May | 9:00 – 10:30 | Theater Hall

Does Social Communication Predict COVID-19 Side Effect Expectations and Experience?: Evidence From a Longitudinal Study

Andrew Geers, PhD

Department of Psychology, University of Toledo, USA

Abstract description

Negative beliefs about COVID-19 vaccine side-effects spread rapidly through social communication. We tested if pre-vaccination social communications about side-effects from personal acquaintances, news reports, and social media predict post-vaccination side-effect experiences. Further, we assessed if expectations mediate the relationships between social communication and side-effect experience. In a prospective longitudinal survey (N=551), COVID-19 vaccine side-effect information from three sources—social media posts, news reports, and accounts from personal acquaintances—as well as side-effect expectations, were self-reported pre-vaccination. Vaccination side-effects were assessed post-vaccination. Social media post views and personal acquaintance communications significantly predicted an increase in pre-vaccination side-effect expectations, and the same variables predicted experienced side-effects. Moreover, pre-vaccination side-effect expectations fully mediated the relationship between both sources of social communication and experienced side-effects following vaccination. This study identifies new links between personal acquaintance and social media communications and vaccine side-effect experiences and finds that pre-vaccination expectations account for these relationships. Modifying side-effect expectations through these channels may change side-effects following COVID-19 vaccinations as well as other publicly discussed vaccinations.

SPECIAL SPOTLIGHT SESSION

NOCEBO AND COVID

Thursday, 11 May | 9:00 – 10:30 | Theater Hall

Investigating the nocebo effect during a world pandemic: how perceived COVID-19 susceptibility influences COVID-like symptom experience, and what that means for daily well-being

Liron Rosenkrantz, PhD

Faculty of Medicine, Bar-Ilan University, Israel

Abstract description

Evidence from nocebo and psychosomatic research indicates that health beliefs have a significant impact on physical health. Specifically, believing one will develop symptoms makes the experience of such symptoms more likely. However, what specific health belief underlies this effect, and can it predict the experience of unexplained symptoms? Building on nocebo research and our framework of beliefs as higher-order predictions[1,2], we took advantage of COVID-19 to answer these questions. Utilizing two longitudinal studies with over 300 participants, we (A) identified a particular belief regarding estimated COVID-19 symptom severity as the only belief-related factor associated with symptom experience. (B) demonstrated that this belief predicts COVID-like symptoms 3-4 weeks later[3]. Our findings, which were pre-registered and replicated in a separate cohort, also reveal a novel construct reflecting perceived susceptibility to illnesses, which fully mediated this effect. Taken together, our findings contribute to the understanding of the development of unexplained symptoms, and could inform future belief-modifying interventions aimed at improving well-being. We will also discuss our ongoing work on extending these findings to daily well-being beyond COVID-19.

SPECIAL SPOTLIGHT SESSION

NOCEBO AND COVID

Thursday, 11 May | 9:00 – 10:30 | Theater Hall

A Fab Jab Outside the Lab: Shaping mindsets about side effects to improve experience of the COVID-19 vaccine

Lauren Heathcote, Dr.

King's College, London

Abstract description

Clinicians have a responsibility to inform patients about possible side effects, yet merely telling patients what symptoms are possible can increase nocebo effects. Furthermore, concerns about side effects are a major barrier to vaccination against viruses COVID-19. In this randomized controlled trial, participants (N=528) who had just received the second COVID-19 vaccine shot were either assigned to watch a short video about side effects (in addition to receiving the standard, written information about side effects) or received only the standard written information about side effects. Intervention participants watched a 4-minute video describing how minor side effects are a positive sign that the vaccine is working and the body is building immunity. Compared to the treatment-as-usual control participants, those exposed to the mindset that "symptoms are positive signals" experienced fewer symptoms immediately after vaccination, were less worried about symptoms three days later, and had increased intentions to vaccinate against COVID-19-like viruses in the future. This brief, scalable intervention is an encouraging solution to keeping patients informed without increasing nocebo effects. This talk will discuss the evidence and consideration of using this approach in clinical practice, particularly in relation to vaccines.

SPECIAL SPOTLIGHT SESSION

NOCEBO AND COVID

Thursday, 11 May | 9:00 – 10:30 | Theater Hall

The contagion of nocebo: fear, believe and negative expectations coming from COVID-19 pandemic worsen flu-like symptoms

Arianna Bagnis, PhD

University of Bologna, Italy

Abstract description

Among the many cHallenges of the COVID-19 pandemic, a crucial question is whether and to what extent the fear and expectation of contracting SARS-CoV-2 can influence individual perception of health. Since COVID -19 and influenza-like illness have similar clinical manifestations, it is reasonable to expect that individuals who interpret their symptoms with stronger beliefs and fear of being infected with COVID-19 would perceive their health to be poorer than those who have no expectations. 967 citizens with suspected COVID -19 symptoms who came for COVID-19 test, were surveyed online using Qualtrics barcode. Data from 523 citizens (283F) resulting negative for COVID -19 were entered into a structural equation model. Fear and belief of having COVID -19 accounted for 60% of the variance in perceived health. Despite not having COVID-19, individuals who interpreted their symptoms with a stronger belief and fear of being infected with SARS-CoV-2 perceived a higher number and more severe COVID -like symptoms. The results suggest the occurrence of nocebo effects during the pandemic. The nocebo component affects how people perceive their health and, therefore, healthcare system costs by increasing the number of people requesting a COVID-19 test.

Plenary Session III

Thursday, 11 May
11:00 – 12:15
Theater Hall

PLENARY SESSIONS

PLENARY SESSION III

Thursday, 11 May | 11:00 – 12:15 | Theater Hall

Placebo Effects in Clinical Trials
Predicting individual differences in placebo responsivity in laboratory settings and trials

Chair and introduction

Luana Colloca, PhD

University of Maryland, School of Nursing, USA

Abstract description

Placebo research has implications for the design, conduct and interpretation of clinical trials. Clinical trials should account for confounding factors (i.e. natural history and regression to the mean). An additional problem is the fact that positive prior experience creates strong expectations in the individuals receiving the active drug first as compared to those receiving the placebo first. Therefore, it is critical to measure expectations of research staff, study individuals and proxies. Yet, the predictive value of expectations and other factors remain unknown.
In laboratory settings, research can be tailored to discover ramifications of the placebo phenomena and how these ramifications can be determined to inform the design and conduct of clinical trials as well as clinical practice. In this talk, I will outline the state-of-the-art of psychological and neurobiological underpinnings of predictors of placebo effects including sex, racial and ethnic disparities, psychological constructs and clinical phenotypes. The research findings will be presented in a way to illustrate implications on how to predict individual difference in placebo responsivity in clinical trials.

Bio

Luana Colloca is an MPower Distinguished Professor at the University of Maryland in the School of Nursing in the US. Luana leads a research portfolio exploring endogenous pain perception,processing and modulation in which the expectancy of analgesic relief, which can actually activate endogenous systems, is explored from a psychoneurobiological perspective from genetics to brain imaging.
This also includes placebo/nocebo effects and other nonpharmacological interventions such as virtual reality. Her work on the neurobiological mechanisms of placebo and nocebo effects with an multifaced approach, including psychopharmacological, neurobiological and behavioral approaches, raises the possibility of unfolding the mechanisms of expectancy-induced analgesia with potential implications for pain management.

Twitter: @Colloca_Luana
Website: https://colloca.wixsite.com/colloca-lab

PLENARY SESSIONS

PLENARY SESSION III

Thursday, 11 May | 11:00 – 12:15 | Theater Hall

Placebo Effects in Clinical Trials
The placebo response in clinical trials of neuropathic pain

Nanna Finnerup, Prof.

Danish Pain Research Center in the Department of Clinical Medicine, Aarhus University, Denmark

Abstract description

The recent systematic review and meta-analysis, which provided the basis for the latest recommendation on neuropathic pain pharmacotherapy, demonstrated large numbers needed to treat (NNT) for most neuropathic pain medications, compared with the previous guidelines. In addition, multiple recent clinical trials in neuropathic pain with preclinically promising drugs have failed. While we did not see a general increase in placebo responses over time, large placebo responses may cause low assay sensitivity of clinical trials. An inherent assumption in the RCT design is that the difference between the observed analgesic drug response and the observed placebo response can be attributed to the "true" pharmacological effect of the drug. This may not be the case in studies with high placebo responses. High placebo responses may have implications for the outcome of clinical trials, systematic reviews and evidence-based clinical treatment guidelines. The role of expectation for the placebo response will be discussed with examples from recent studies with cannabis-based medicine. I will also touch upon other reasons for the placebo response such as biased attention, regression towards the mean and inflation of baseline scores.

Bio

Nanna Finnerup is a Professor for Pain Research at the Danish Pain Research Center in the Department of Clinical Medicine at Aarhus University in Denmark. Her main interest is the pathophysiology and therapy of neuropathic pain. Nannaseeks to understand the molecular mechanisms associated with pain caused by nerve injury. Current research areas include spinal cord injury pain, chemotherapy-induced neuropathic pain, painful diabetic polyneuropathy, postsurgical neuropathic pain, thermal sensory integration, neurophysiological assessment of pain mechanisms, placebo mechanisms, as well as neuropharmacology. For example, she studies genetic factors that may increase the risk of developing neuropathic pain caused by nerve injury, the aim being, in time, to contribute to design of precision medicine.

Twitter: @nannafinnerup
Website: https://pure.au.dk/portal/en/persons/nanna-brix-finnerup(96511d27-1bc4-4075-82d7-3382b8b4c167).html

PLENARY SESSIONS

PLENARY SESSION III

Thursday, 11 May | 11:00 – 12:15 | Theater Hall

Placebo Effects in Clinical Trials
Options to limit placebo / nocebo effects in clinical research: a CRO perspective

Peter Schüler, MD

ICON Clinical Research

Abstract description

Various placebo-effects reduce the measurable effect size in clinical trials. Most of these are perceived effects, including baseline-inflation, regression to the mean, spontaneous remission of the disease, patients' interest to please the doctor and rater bias for soft endpoints.In an attempt to optimize the success rates of trials with a risk of high placebo-effects, measures can and should be brought in place: de-linking primary endpoint from screening items, raters' and participating patients' training and supervision, central rating, the use of alternative harder (e.g. imaging or digital) endpoints, and the use of predictors for a high placebo effect as a statistical co-variate. These can individually lower placebo-effects by about 20%, but the additive effect of multiple measures is unfortunately lower. It is not understood why – also because we not have adequate studies evaluating the effects of such measures in a randomized fashion, e.g. in a "study within an trial" (SWAT).

Bio

Dr Peter Schüler, MD, is board certified in Neurology, Neurophysiology and Epilepsy (Germany) and in Pharmaceutical Medicine (Swiss Medical Board) and certified in Business Administration (Henley College, London). He started his academic career at University Hospital Erlangen, Germany, joined Pharmacia as Head Medical Affairs CNS for the German-speaking countries in 1995 and moved into the CRO business in 2000. In 2015 he was appointed Sr VP Drug Development Solutions Neurosciences at ICON.

He was involved in the design and conduct of various proof-of-concept, dose-finding and pivotal studies in nearly all CNS indications. He is editor of the Elsevier textbooks “Re-engineering clinical trials” in 2015 and in 2020 of “Innovation in Clinical Trial Methodologies”. He lectures Pharmaceutical Medicine at the University of Duisburg-Essen as Head Lecturer and acting-chair of the Scientific Course Committee and is invited lecturer at the European Center Pharmaceutical Medicine (ECPM) at the University of Basel, Switzerland. He was member of the DIA Regional Advisory Council EMEA from 2017 to 2021 and currently is President of the German Society for Pharmaceutical Medicine (DGPharMed).

Datablitz Session III

Thursday, 11 May
12:15 - 12:55
Theater Hall

DATABLITZ SESSIONS

DATABLITZ III

Thursday, 11 May | 12:15 - 12:55 | Theater Hall

Placebo Effects in Clinical Trials

Amke Müller

Combined N-of-1 trials to assess open-label placebo treatment for antidepressant discontinuation symptoms.

Antidepressant discontinuation is associated with negative side-effects, contributing to unnecessary long-term intake. Negative expectations towards discontinuation likely influence discontinuation symptoms (nocebo effect). Our objective is to determine the effect of open-label placebo (OLP) treatment in reducing discontinuation symptoms, examining the role of expectations. A series of N-of-1 trials is conducted in 20 patients with remitted depressive disorder reporting moderate discontinuation symptoms following antidepressant discontinuation. During the eight-week trials, patients go through two cycles each containing two-week periods of OLP and no treatment in random order. Discontinuation symptoms and expectations thereof are rated twice daily via smartphone (StudyU application). Analysis employ a Bayesian multilevel random effects model yielding posterior estimates of the overall and individual treatment effects. Individual trajectories of four completed N-of-1 trials show that negative expectations at the previous assessment are related to more discontinuation symptoms at the following assessment (r=.52 to r=.71). Visual inspection of individual trajectories shows variation in the expression and course of discontinuation symptoms and expectations (range: 0-10). Preliminary analyses suggest that treatment expectations can influence the severity of discontinuation symptoms, indicating the need for interventions to target expectations.

DATABLITZ SESSIONS

DATABLITZ III

Thursday, 11 May | 12:15 - 12:55 | Theater Hall

Placebo Effects in Clinical Trials

Maria Lalouni

Placebo controlled surgery for sacroiliac joint pain, a double blind randomized controlled trial

Sacroiliac (SI) joint pain is prevalent and debilitating. Evidence for non-operative treatments is limited. Studies of minimally-invasive surgical fusion show promising results. However, many studies are industry-sponsored and lack placebo-controls.Patients aged 35-60 years, n=23 (22 females), with SI-joint pain were randomized to SI-joint fusion or sham operation in a double-blind trial at Karolinska University Hospital, Sweden. Measures included resting-state functional magnetic resonance imaging and quantitative sensory testing (QST), before surgery and at six months follow up. Last week's average pain and treatment expectation were self-assessed on a VAS scale (0-100). QST included pressure pain thresholds and supra threshold pain (4/10 NRS) on the thigh and the SI-joint pain site. Last week's average pain was reduced from baseline to follow-up for fusion compared with placebo (P=0.031). Functional connectivity between S1 (hip/back area) and default mode network was decreased in the fusion group compared with placebo. There were no differences in QST change between groups. There was a trend for higher treatment expectations in responders compared with non-responders. Because of the small sample, results need to be interpreted with causion.

DATABLITZ SESSIONS

DATABLITZ III

Thursday, 11 May | 12:15 - 12:55 | Theater Hall

Placebo Effects in Clinical Trials

Moa Ponten

Expectancy effects in online versus face-to-face psychological interventions – an individual participant data meta-analysis

Online treatments are increasing in number and currently available for a wide range of clinical problems. Little is known about the role of treatment expectations and other placebo-like mechanisms in online settings. MEDLINE and PsycINFO were last searched Feb 2, 2021. Randomized clinical trials of therapist guided online versus face-to-face psychological interventions for psychiatric or somatic conditions were included. Authors of matching trials were contacted for individual participant data. Ratings from the Credibility and Expectancy Questionnaire (CEQ) and the primary outcome measure from each trial were used to estimate the association between expectation ratings and treatment outcomes in online versus face-to-face interventions, using a mixed-effects model. Of 7045 screened studies, 62 full-text articles were retrieved whereof six studies fulfilled the criteria and provided individual participant data (n=491). Overall, CEQ ratings predicted clinical outcomes (β=0,27) at end of treatment with no moderating effect of treatment modality (online versus face-to-face). Online treatment appears to be equally susceptible to expectancy effects as face-to-face therapy. This furthers our understanding of the importance of placebo-like factors in online treatment and may aid the improvement of healthcare in online settings.

DATABLITZ SESSIONS

DATABLITZ III

Thursday, 11 May | 12:15 - 12:55 | Theater Hall

Placebo Effects in Clinical Trials

Stefan Schmidt

Treatment Effects in Pharmacological Clinical Randomized Controlled Trials are Mainly Due to Placebo

The placebo response in clinical trials has four components: regression to the mean (RTM), measurement artefacts, the natural tendency (NT) of the disease, and the genuine placebo effect. We assessed predictors of the placebo response in clinical trials. For five diagnoses where NT rates were available (osteoarthritis of the knee, irritable bowel syndrome, depression, sleep disorders, migraine) 150 placebo-controlled RCTs were searched. We extracted study descriptors and fitted two meta-regressions to predict improvement in treatment and placebo-groups. Both models were significant, explaining 73% and 72% variance. The improvement in the placebo-group can be predicted by improvement in the treatment-group (β= .84), by application of intention-to-treat analysis (β=-.10) and multicenter trial (β=.12). The improvement in the treatment-group can be explained by improvement in the placebo-group (β=.83), multicenter trial (β=-.16), and by RTM (β=-.18). The correlation of r=.73 between placebo and treatment improvement rates is genuine and not explainable by trial or disease characteristics. We conclude from out data that the placebo-response is the major driver of treatment effects in clinical trials. Context effects are more important than pharmacological effects in the conditions studied here.

Plenary Session IV

Thursday, 11 May
14:30 – 16:00
Theater Hall

PLENARY SESSIONS

PLENARY SESSION IV

Thursday, 11 May | 14:30 – 16:00 | Theater Hall

Patient Physician Interaction and Communication

Andrea Evers, Prof.

Institute of Psychology, Leiden University,
The Netherlands

Chair and introduction

Andrea Evers is a Professor for Health Psychology at the Institute of Psychology at Leiden University in the Netherlands. Her research focuses on psychoneurobiological factors, such as stress and expectations, in health and disease. She has a specific interest in the psychoneurobiology of somatic complaints (e.g., pain and itch) and conditions (e.g., chronic inflammatory conditions), with particular emphasis on placebo effects, stress mechanisms, and treatments. Her research group conducts both fundamental research on the psychoneurobiology of placebo and stress mechanisms and translational research on screening and self-management or cognitive-behavioral interventions for healthy populations and chronic somatic conditions.

Twitter: @AndreaEvers
Website: https://www.andreaevers.nl/

PLENARY SESSIONS

PLENARY SESSION IV

Thursday, 11 May | 14:30 – 16:00 | Theater Hall

Patient Physician Interaction and Communication
How the patient/clinician relationship affects placebo analgesia: a hyperscan neuroimaging approach

Vitaly Napadow, PhD

Harvard Medical School, USA

Abstract description

The patient-clinician interaction can powerfully shape treatment outcomes such as pain but is often considered an intangible “art of medicine” and has largely eluded scientific inquiry. Although brain correlates of social processes such as empathy and theory of mind have been studied using single-subject designs, specific behavioral and neural mechanisms underpinning the patient-clinician interaction are unknown. Using a two-person interactive design, we have constructed both a fMRI and EEG setup to simultaneously record hyperscan neuroimaging data from patient-clinician dyads, who interacted via live video (for fMRI) or face to face (for EEG), while clinicians treated evoked pain in patients with chronic pain. Our recently published fMRI results (Ellingsen et al., 2020, 2021) showed that patient analgesia was mediated by patient-clinician nonverbal behavioral mirroring and brain-to-brain concordance in circuitry implicated in theory of mind and social mirroring. Dyad-based analyses showed extensive dynamic coupling of these brain nodes with the partners’ brain activity, yet only in dyads with pre-established clinical rapport. These findings introduce a putatively key brain-behavioral mechanism for therapeutic alliance and psychosocial analgesia. This talk will supplement our previously published results with results from ongoing hyperscan EEG studies and introduce future directions for this nascent field of research.

Bio

Vitaly Napadow is a Professor for Radiology at Harvard Medical School in the US. Somatosensory, cognitive, and affective factors all influence the malleable experience of chronic pain, and Vitaly's Lab has applied human functional and structural neuroimaging to localize and suggest mechanisms by which different brain circuitries modulate pain perception. His neuroimaging research also aims to better understand how non-pharmacological therapies, from acupuncture and transcutaneous neuromodulation to cognitive behavioral therapy and mindfulness meditation training, ameliorate aversive perceptual states such as pain.

Twitter: @VitalyNapadow
Website: https://scholar.harvard.edu/napadow/vitaly

PLENARY SESSIONS

PLENARY SESSION IV

Thursday, 11 May | 14:30 – 16:00 | Theater Hall

Patient Physician Interaction and Communication
Recent and ongoing studies on the science of patient-clinician interactions

Karin Jensen, Prof.

Department of Clinical Neuroscience, Karolinska Institute, Sweden

Abstract description

The interaction between a patient and caregiver shape placebo responses but the specific mechanisms are poorly understood. In a series of studies, we have investigated mechanisms associated with patient-clinician interactions and their effects on patient outcomes. Our most recent line of studies includes an individual patient-data meta-analysis (IPDMA) comparison of expectations in online versus face-to-face psychological treatments, treatment of experimental sickness with different types of physician interactions, as well as the role of media attention for expectations about drug efficacy and patient-clinician consultations. I will provide an overview of the results from our new studies and point to limitations and future directions for the science of patient-clinician interactions.

Bio

Karin Jensen is an Associate Professor for Clinical Neuroscience at the Department of Clinical Neuroscience at the Karolinska Institute in Sweden. Her research group focuses on brain mechanisms involved in the experience of pain and placebo effects. Karin's work has cHallenged existing models of the placebo effect and contributed novel scientific data demonstrating that (a) placebos work outside of conscious awareness, (b) placebos work among patients with severe intellectual disabilities, and (c) placebo effects are shaped by subtle social cues between a patient and health-care provider. Karin adopts an evolutionaryperspective of the placebo effect and studies placebos in previously understudied contexts such as psychotherapy, surgery and intellectual disability.

Website: https://www.kipain.com/

PLENARY SESSIONS

PLENARY SESSION IV

Thursday, 11 May | 14:30 – 16:00 | Theater Hall

Patient Physician Interaction and Communication
How words heal and harm in clinical practice

Liesbeth van Vliet, Prof.

Department of Health, Medical and Neuropsychology,
Leiden University, The Netherlands

Abstract description

In clinical consultations, words matter. Words have the power to help patients, but also the power to harm. In this presentation, Dr van Vliet will provide an overview of how communication can elicit both placebo and nocebo-effects in clinical practice. To do so, she will focus on the topics of information-provision and clinician-expressed empathy. Join us to hear some of the latest insights on these topics from the field of communication research, as well as a glimpse into the future in which the research worlds of communication and placebo- and nocebo-effects can be further integrated.

Bio

Liesbeth Van Vlieth is an Assistant Professor for Health, Medical and Neuropsychology at the Department of Health, Medical and Neuropsychology at Leiden University in the Netherlands. She studies how communication can heal and harm when patients are confronted with a serious, life-threatening illness. To do so, she combines insights from communication, palliative care, and placebo- / nocebo-effect research. Liesbeth is interested in the evidence-base of various communication elements, ranging from information-provision to clinician-expressed empathy. Most of her research focusses on oncology, but she also has expertise in the domains of neurology and pediatric palliative care. She is experienced in a range of quantitative and qualitative methodologies; from experimental video-vignette designs, observationalstudies, to clinical RCTs.

Twitter: @Liesbeth_vVliet
Website: https://liesbethvanvliet.wordpress.com/

Datablitz Session IV

Thursday, 11 May
16:00 – 16:30
Theater Hall

DATABLITZ SESSIONS

DATABLITZ IV

Thursday, 11 May | 16:00 – 16:30 | Theater Hall

Patient Physician Interaction and Communication

Anna Seewald

How to change negative outcome expectations in psychotherapy? The role of the therapist's warmth and competence

Negative outcome expectations of psychological treatments predict unfavorable treatment outcomes. Therefore, therapists should approach negative outcome expectations and transform them into more positive outcome expectations. We investigated the therapist's interpersonal behavior in two studies to induce positive outcome expectations. In two online experiments, we presented videos of therapist-patient interactions to induce positive outcome expectations. While we kept the expectation-forming information constant, we manipulated the therapist's warmth and competence in the videos. Results confirmed a significant influence of the therapist's warmth and competence on outcome expectations, leading to the most positive outcome expectations when the therapist was warm and competent. Furthermore, warmth and competence influenced alliance, therapy motivation, and help-seeking.In contrast to former correlational analyses, our experimental studies confirm the causal role of the therapist's interpersonal behavior and its impact on changing patients' outcome expectations. We discuss the clinical implication of these results and further research ideas.

DATABLITZ SESSIONS

DATABLITZ IV

Thursday, 11 May | 16:00 – 16:30 | Theater Hall

Patient Physician Interaction and Communication

Dasha Sandra

Presenting a Sham Treatment as Personalised Increases its Effectiveness

Tailoring interventions to patient subgroups can improve treatment outcomes for various conditions. Yet, it is unclear how much of this improvement is due to the pharmacological personalisation itself versus the related contextual factors, such as the therapeutic interaction. Here, we tested whether presenting a placebo machine as personalised would improve its effectiveness. We recruited 102 adults in two samples (N1 = 17, N2 = 85) to receive painful heat stimulations on their forearm. During half of the stimulations, a placebo machine purportedly delivered an electric current to reduce their pain. The participants were either told that the machine was personalised to their genetics, or that it was effective in reducing pain generally. Participants receiving the sham personalisation reported more relief in pain intensity than the control group in the feasibility study (standardised B = -0.50 [-1.08, 0.08]) and the pre-registered double-blind confirmatory study (B = -0.20, [-0.36, -0.04]). We found similar effects on pain unpleasantness and various personality moderators. We present the first evidence that precision treatments may benefit from the contextual factors associated with the personalisation process. Isolating these factors could help improve control in clinical trials or potentially boost treatment effects in clinical settings.

DATABLITZ SESSIONS

DATABLITZ IV

Thursday, 11 May | 16:00 – 16:30 | Theater Hall

Patient Physician Interaction and Communication

Justine Schmidt

Effects of positive treatment expectation on psychological and bodily sickness symptoms during experimental endotoxemia: A randomized controlled study in healthy volunteers

Inflammatory mediators released during inflammatory conditions induce unspecific physical and psychological sickness symptoms. It remains unclear whether sickness symptoms can be modulated by expectation. We employed human experimental endotoxemia to induce sickness symptoms in healthy volunteers in combination with a placebo-controlled anti-inflammatory drug treatment, aiming to test for treatment expectation effects on inflammation-mediated sickness symptom. In this ongoing study, all healthy volunteers received 0.8ng/kg lipopolysaccharide (LPS) to induce sickness symptoms. We herein report on N=47 volunteers who received a placebo pill, randomly combined with positive or neutral treatment-related information, before LPS-injection. Inflammatory markers and sickness symptoms were repeatedly assessed up to six hours post LPS-injection. LPS application induced transient increases in inflammatory markers and in self-reported sickness symptoms in all participants (all $p<.001$, time effect). Compared to neutral treatment expectation, participants in the positive condition reported significantly less bodily symptoms ($p<.05$) and - as a trend - decreased symptoms of negative mood in response to LPS. Our findings indicate a beneficial effect of verbally induced positive expectation on sickness symptoms, suggesting that expectation effects may enhance treatment efficacy in the context of immune-mediated sickness symptoms.

DATABLITZ SESSIONS

DATABLITZ IV

Thursday, 11 May | 16:00 – 16:30 | Theater Hall

Patient Physician Interaction and Communication

Arvina Grahl

Treatment adherence and the patient-clinician relationship: a longitudinal fMRI hyperscan study in chronic pain patients

A warm-empathic/augmented patient-clinician relationship can substantially boost clinical outcomes. In this longitudinal study, fibromyalgia patients (N=23) were randomly assigned to an Augmented (N=11) or Limited (N=12) patient-clinician dyadic interaction style (trained acupuncturists). Each dyad underwent synchronized fMRI between two scanners, with a live video connection and evoked pressure pain/treatment before and after acupuncture therapy (3 weeks, 6 sessions). Patients rated Therapeutic Alliance, Trust, and clinicians' Warmth higher for the Augmented vs. Limited group ($p<0.001$). Pain catastrophizing was significantly reduced after acupuncture therapy in the Augmented, $\Delta A=-7.45$, but not Limited group, $\Delta L=0.59$ (time-group-interaction $p=0.004$). For both groups, acupuncture decreased clinical pain (no pain relief group difference: $\Delta A=-1.04$, $\Delta L=-1.33$) and reduced patients' fMRI response to evoked pressure pain in nociceptive processing areas. However, the Augmented group reported a higher likelihood of continuing acupuncture with their assigned clinician after the study, i.e., were willing to seek further care for their chronic pain. Our study supports the potential importance of the patient-clinician relationship to treatment adherence and suggests brain mechanisms supporting the influence of this relationship on clinically relevant outcomes.

Keynote Lectures

Thursday, 11 May
17:00 – 18:00
Theater Hall

KEYNOTE LECTURES

KEYNOTE LECTURE I

Thursday, 11 May | 17:00 – 18:00 | Theater Hall

Lisa Feldmann Barrett (virtual)

Science Slam

NEW

Thursday, 11 May
18:00 – 19:00
Theater Hall

SCIENCE SLAM

SCIENCE SLAM:

Thursday, 11 May | 18:00 – 19:00 | Theater Hall

For the first time ever, the SIPS conference will feature a Science Slam, organized and hosted by our Early Career Researchers, including prizes for the best three presentations!

Eight selected applicants from different institutions over the world will present their work to the SIPS attendees in only 4 minutes. With this science slam, we want to showcase the often complex and specific work that we do, but make it accessible to people outside your field – and a great way to start is to practice it with people in the field! There are no bounds to how presenters use their time – they can be as creative as they like (e.g. bring props, use sounds, visuals, etc.). After each presentation, the audience will have the opportunity to ask questions for two minutes. The best presentations will be announced and receive their prizes at the SIPS closing session on Saturday May 13th.

Talk title	Presenter
Will words work wonders?	Livia Asan (University Hospital Essen)
To reduce nocebo effects, describe symptoms as positive signals	Kari Leibowitz (Stanford University)
What can psychedelic drugs teach us about placebo-controlled trials?	Lukas Basedow (Philipps-University Marburg)
Contextual enhancement package for osteoarthritis management	Ayah Ismail (University of Nottingham)
Uncorking the placebo effects in wine: From marketing to medicine	Elif Buse Caliskan (University Hospital Essen)
Beliefs and doping: Are placebo effects encouraging substance use in sport?	Philip Hurst (Canterbury Christ Church University)
Itching for science – Modelling anti-allergic placebo effects in the healthy crowd	Stefanie Hölsken (University Hospital Essen)

SCIENCE SLAM

SCIENCE SLAM:

Thursday, 11 May | 18:00 – 19:00 | Theater Hall

Will words work wonders?

Livia Asan

University Hospital Essen

Talk description

Health care professionals really are stuck in a dilemma. On the one hand, the standard of obtaining informed consent from patients comes with the obligation to disclose all information they need to weigh pros and cons of any treatment or procedure. On the other hand, we know that telling people about potential risks and side effects might elicit just those via the nocebo effect. In fact, there might be a way out of this predicament: using the right words. Can we deliver information in an effective way that does not create negative expectations? Might we be able to prevent nocebo effects, not by downplaying risks or withholding information, but instead by simply by choosing the right expressions? I want to show you our approach on how we test whether communication strategies during informed consent can reduce side effects after lumbar puncture- an abundant procedure in neurology. Together, we will explore some other instances where you could maybe work wonders just by using (or avoiding) certain words. After this talk, you might delete some phrases out of your standard communication repertoire and add new ones, to the benefit of your patients.

Bio

Livia investigates the role of dopamine for placebo analgesia, the utilization of placebo and avoiding nocebo in clinical settings, and expectation effects in clinical populations as a clinician scientist.

SCIENCE SLAM

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To reduce nocebo effects, describe symptoms as positive signals

Kari Leibowitz

Stanford University

Talk description

Nocebo effects got you down? Wishing there was a better way to keep patients informed of possible side effects without making them more likely? Try SYMPTOMS AS POSITIVE SIGNALS! Across multiple studies, we find that truthfully framing minor side effects of treatment as positive signals that the treatment is working can help patients know what to expect while providing encouragement that treatment is going well.In a six-month study of patients receiving oral immunotherapy treatment for life-threatening peanut allergies, this approach reduced anxiety, decreased questions about side effects, reduced side effects at the largest dose sizes, and increased biomarkers of allergic tolerance! In patients who had just received their second COVID-19 shot, a four-minute video describing how minor side effects mean the body is building immunity led to fewer symptoms immediately after vaccination and reduced worry about side effects three days later! If there's a common underlying mechanism between symptoms and treatment efficacy, and the side effects aren't dangerous or life-threatening, framing symptoms as positive signals might be right for YOU! Tune infor more on the evidence, promise, and pitfalls of this approach in this EXCLUSIVE science slam by Kari Leibowitz, PhD!

Bio

Kari's work aims to help us understand how mindsets can be harnessed to improve health and experience in clinical contexts.

SCIENCE SLAM

SCIENCE SLAM:

Thursday, 11 May | 18:00 – 19:00 | Theater Hall

What can psychedelic drugs teach us about placebo-controlled trials?

Lukas Basedow

Philipps-University Marburg

Talk description

Psychoactive substances, be they medical or recreational, are always used in a context. This context, often referred to as “set and setting“, has always been recognized as an influence on drug effects. But can we really distinguish effects that stem from pharmacological action from effects due to expectations and other context factors? In this Slam-talk I will spell out current issues and future directions for placebo-controlled drug trials, using the example of drug-assisted psychotherapy.

Bio

Lukas focuses on the consequences of drug use, the modulation of treatment expectations and the effect of drug-related expectations on subjective and therapeutic effects in his postdoc.

SCIENCE SLAM

SCIENCE SLAM:

Thursday, 11 May | 18:00 – 19:00 | Theater Hall

Contextual enhancement package for osteoarthritis management

Ayah Ismail

University of Nottingham

Talk description

Contextual effect is integral in the overall treatment effect of any given intervention. In osteoarthritis, 75% of the treatment effect is attributable to the contextual effect. Therefore, we are developing a Contextual Enhancement Package (CEP) to enhance the overall treatment effect. The UK Medical Research Council framework for complex intervention development was followed to develop CEP. Five sub-studies have been conducted in the development phase: a Delphi consensus among international experts in placebo research; a systematic review (SR) of randomised control trials (RCTs); a SR of qualitative studies; a survey of stakeholders; and public and patient involvement (PPI) throughout the development. Of 16 contextual factors (CFs) identified by placebo experts through the Delphi consensus, three (empathy, patient involvement and positive communication) had therapeutic effects from the SR of RCTs, and an additional five (clear and relevant information, confidence of health practitioner, patient expectation, consultation time, and easy access to consultation) were supported by the qualitative SR. All eight CFs were supported by the stakeholder survey and PPIs. Eight CFs have been identified. They will form the basis to develop a CEP with feasibility testing and evaluation of clinical effectiveness and cost-effectiveness of the intervention.

Bio

Ayah works on developing a package which helps to better manage osteoarthritis and teaches physiotherapy in Jeddah, Saudi-Arabia.

SCIENCE SLAM

SCIENCE SLAM:

Thursday, 11 May | 18:00 – 19:00 | Theater Hall

Uncorking the placebo effects in wine: From marketing to medicine

Elif Buse Caliskan

University Hospital Essen

Talk description

Throughout the history, the success of the clinical practice has relied on the contextual factors surrounding a treatment. Modern medicine, however, focused on the pharmacological effects of a drug, leaving out the therapeutic potential of clinical encounter. The latter one is mainly defined by patients' beliefs and expectations shaped by their prior experiences in their daily life. Marketing is one of the areas, that still integrates these psychological factors effectively in its daily practice. These are often addressed in advertisements to influence the judgment of consumers about the products and services. Hereby a mere change at the label of the product or the music playing at the background aims to influence the perception of consumers. These beliefs and expectations further affect their subjective experience with the product and subsequently, the decision if they would buy the product again. This may be translated into patient-clinician interaction, in which simple environmental cues like decoration, appearance and manner of healthcare provider as well as the price and advertisement of the treatment itself have pivotal impact on treatment efficacy and compliance of the patient. To this end, we will explore what we can adopt from neuroeconomics to improve the medical practice.

Bio

Elif explores the complex ways in which our beliefs, expectations, and perceptionscan influence our health and well-being, as well as placebo and nocebo effects, as a clinician scientist.

SCIENCE SLAM

SCIENCE SLAM:

Thursday, 11 May | 18:00 – 19:00 | Theater Hall

Beliefs and doping: Are placebo effects encouraging substance use in sport?

Philip Hurst

Canterbury Christ Church University

Talk description

Performance enhancing substance use (i.e., doping) is associated with several acute and chronic health disease. However, evidence to support the effectiveness of doping substances to improve sport performance is equivocal. Several researchers have argued that a large proportion of the effectiveness can be the result of placebo effects. A growing body of evidence has shown that placebo effects can mimic the effects of doping substances and that beliefs that doping is effective, can encourage future doping use. The aim of this session is to highlight the role of beliefs and placebo effects in an athlete's decision to dope.

Bio

Philip's research interests examine the effectiveness of performance enhancing substances and developing educational interventions that prevent doping abuse in sport as a senior lecturer.

SCIENCE SLAM

SCIENCE SLAM:

Thursday, 11 May | 18:00 – 19:00 | Theater Hall

Itching for science – Modelling anti-allergic placebo effects in the healthy crowd

Stefanie Hölsken

University Hospital Essen

Talk description

In this talk, we will delve into classical conditioning as an approach to experimentally evoke placebo responses in the immune system. To do so, an experimental trial focusing on allergic skin reactions will be presented. Allergies provide a good model for the exploration of placebo mechanisms, as placebo rates are exceptionally high in this field. A number of studies have provided evidence for the involvement of psychological factors in the occurrence of allergic symptoms and, using classical conditioning, both the provocation of allergic symptoms as well as the alleviation of these could be achieved. We employed a model applicable to healthy subjects to test the alleviation of subjective and objective allergic skin responses by conditioning anti-histaminergic medication. Such paradigms can provide important insights into the factors underlying placebo responses, not only in allergies but in the immune system in general.

Bio

Stefanie is interested in the role of verbal suggestions and learning experiences for placebo effects in the immune system and their influence on the treatment outcomes of patients suffering from chronic skin diseases in her PhD.

Plenary Session V

Friday, 12 May
08:30 – 10:00
Theater Hall

PLENARY SESSIONS

PLENARY SESSION V

Friday, 12 May | 08:30 – 10:00 | Theater Hall

Social Aspects of Placebo Effects

Ben Colagiuri, PhD

University of Sydney, Australia

Chair and introduction

Ben Colagiuri is a Professor for Psychology in the School of Psychology at the University of Sydney in Australia. His research explores how expectations influence human behavior. The majority of his research focuses on placebo and nocebo effects, with a special interest in placebo effects in randomized controlled trials and whether warning patients about side effects increases their occurrence or severity. Other interests include research methodology, psycho-oncology, and complementary medicine. To date, he has developed a number of novel experimental models to uncover the mechanisms of placebo and nocebo effects for pain, sleep, nausea, and related conditions. His current work is exploring how knowledge about placebo and nocebo effects could be used ethically to improve patient outcomes.

Twitter: @BenColagiuri
Website: https://www.sydney.edu.au/science/about/our-people/academic-staff/ben-colagiuri.html

PLENARY SESSIONS

PLENARY SESSION V

Friday, 12 May | 08:30 – 10:00 | Theater Hall

Social Aspects of Placebo Effects

Siri Leknes, Prof.

University of Oslo, Norway

Siri Leknes is a Professor for Social and Affective Neuroscience at the University of Oslo in Norway. The Leknes Affective Brain lab (LAB lab) studies how the brain and body give rise to pleasurable and painful feelings, and how these feelings are connected to decisions and behavior. One interdisciplinary project centered on the benefits of acute pain. LAB lab's main methodology is experimental psychopharmacology in healthy humans, often centered on understanding how opioids modulate pain and pleasure. In addition, the LAB lab studies modulation of pleasure and pain in opioid-treated clinical populations with and without chronic pain and substance use disorder. They currently study state-dependent effects of opioids and their relation to social support, stress and dopamine.

Twitter: @sirileknes
Website: https://sirileknes.com/

PLENARY SESSIONS

PLENARY SESSION V

Friday, 12 May | 08:30 – 10:00 | Theater Hall

Social Aspects of Placebo Effects
The social learning model of placebo effects: verification and extension

Przemysław Bąbel, Prof.

Institute for Psychology,
Jagiellonian University in Kraków, Poland

Abstract description

There is growing evidence that placebo and nocebo effects may be induced by observational learning. The first evidence was reviewed and summarized in the form of the social learning model of placebo effects (Bajcar & Bąbel, 2018), which included both the relationships confirmed in previous studies and hypothesized ones. Since the model was published, a significant body of research has emerged that either verified its assumptions or provided further data on placebo effects induced by observational learning. The main issues addressed by the recent evidence include differences between placebo and nocebo effects; involvement of different types of modeling (i.e., behavioral modeling, symbolic modeling, and verbal modeling); the role of expectancy; individual differences in observers, including empathy; and characteristics of the demonstrator (e.g., sex, social status, self-confidence). The talk will summarize the current state of the art on the role of observational learning in placebo effects, introduce the revised social learning model of placebo effects, and highlight its implications for further research and clinical practice.

Bio

Przemysław Bąbel is a Professor of Psychology at the Institute of Psychology of the Jagiellonian University in Kraków, Poland. Przemysław conducts research on learning mechanisms of placebo effects on pain, pain memory, and psychological factors that alter pain perception. He is involved in the application of behavior analysis and memory psychology in education and therapy fields, including the treatment of chronic pain and people on the autism spectrum. With his team and collaborators, he is developing a theoretical framework of the learning theory of placebo effects.

Twitter: @PrzemyslawBabel
Website: https://bol.edu.pl/

PLENARY SESSIONS

PLENARY SESSION V

Friday, 12 May | 08:30 – 10:00 | Theater Hall

Social Aspects of Placebo Effects
Social placebo effects 2.0: how placebo analgesia may reduce empathy and prosocial behavior

Claus Lamm, Prof.

Faculty of Psychology, University of Vienna, Austria

Abstract description

Placebo effects have long been discussed as entailing a strong social component (e.g. Atlas, Trends Cogn Sci 2021, for review). One aspect that has been less well explored is that placebos can also be used to manipulate brain and cognitive processes in a way that allows to generate novel insights into their very function. In this talk, I will review such research, focusing on placebo analgesia, empathy for pain, and prosocial behavior. This shows that lowering our pain sensitivity using placebo analgesia may reduce empathy, influences how we share the pain of others, and has a profound impact on our prosocial helping behavior. These findings highlight the usefulness of placebos as an underexplored research method, enabling more causal-mechanistic insights into social cognition, brain processes, and behavior. They also have implications beyond basic research, e.g., in light of the opioid crisis. They suggest that lowering one's pain may also impact social emotions and how we interact with others.

Bio

Claus Lamm is a Professor of Biological Psychology at the Faculty of Psychology at the University of Vienna in Austria. Claus' research examines the psychological and biological mechanisms of social cognition and emotion. Apart from advancing insights into the neural and psychological foundations of social cognition and behavior, his goal is to foster a thriving interdisciplinary research environment that will lead to innovative andcutting-edge research in the domain of Social Cognitive Neuroscience. His scientific interests focuses on the neural underpinnings of empathy and prosocial behavior. This includes recent multi-modal investigations combining neuroimaging with psychopharmacology and psychoneuroendocrinology, as well as comparative approaches to test empathy and its precursors in ravens and dogs.

Twitter: @ClausLamm
Website: https://scan-psy.univie.ac.at/

Datablitz Session V

Friday, 12 May
10:00 – 10:30
Theater Hall

DATABLITZ SESSIONS

DATABLITZ V

Friday, 12 May | 10:00 – 10:30 | Theater Hall

Social Aspects of Placebo Effects

Antonia Borcherding

Treatment of chronic low back pain: can social observation improve effects of pain medication or placebos?

Experimental and clinical studies suggest that positive expectations regarding pain treatment have a relevant pain-reducing effect in pain patients. The aim of our study is to investigate the optimization of treatment expectation in chronic low backpain (CLBP) patients by observing others. In our clinical trial (2x2 factorial design) we randomize CLBP patients to either a 3-week treatment with an analgesic, Metamizole (ANA), or to a 3-week treatment with open-label placebos (OLP). Treatment expectations are built through social observation, and their impact on these two treatments will be analysed. Accordingly, patients watch a positive or a neutral video. We assess patient's treatment expectations before and after their 3-week treatment. We test effects of these expectations on subjective and objective outcome. An initial analysis with two-sided t-testing of 46 patients shows a significant decline in pain ratings in both OLP-groups and in the ANA-group without social observation. The ANA-group with social learning shows no significant pain reduction. The initial results may suggest that social observation has a better effect in the OLP-group than in the ANA-group. However, this result should be interpreted with caution.

DATABLITZ SESSIONS

DATABLITZ V

Friday, 12 May | 10:00 – 10:30 | Theater Hall

Social Aspects of Placebo Effects (virtual)

Charlotte Krahe

Updating beliefs about pain following advice: Trustworthiness of social advice predicts pain expectations and experience

Prior expectations about pain influence pain experience. Although social context is critical in shaping pain, previous research has mainly focused on the pain-modulatory role of own rather than social expectations. We studied effects of explicitly communicated social expectations ('advice') on pain. N = 72 female participants undertook a cold water task before and after receiving advice about their likely pain tolerance from a confederate. We examined how participants changed (1) their own pain expectations and pain tolerance based on the advice, and (2) their future pain expectations (prospective posterior beliefs) based on the combined effect of the advice on their expectations, and their experience. Further, we manipulated perceived trustworthiness of the confederate (high; low) to investigate how varying the uncertainty of advice would impact the above measures. Participants adjusted their pain expectations towards the social advice more in the high vs. low trustworthiness condition, and greater advice taking predicted greater pain tolerance. In the high trustworthiness condition, advice increased the precision of prior beliefs relative to precision of new sensory evidence, and less learning was achieved by new sensory evidence. Conversely, advice from a less trustworthy source rendered prior beliefs more uncertain, and more learning was achieved from sensory evidence.

DATABLITZ SESSIONS

DATABLITZ V

Friday, 12 May | 10:00 – 10:30 | Theater Hall

Social Aspects of Placebo Effects

Ilenia Ceccarelli

Sharing pain: nocebo and placebo effects in a group context

Social context plays a crucial role in both placebo and nocebo responses. In a social shared aversive condition, this study investigated the contribution of individual (i.e. pain expectations, social and pain-related personality factors) and group features (i.e. pain tolerance, level of group identification, the quality and strength of the relationship between members, level of trust) in shaping pain perception.
Sixty-one university students (33 women) of the same class were randomly subdivided in 10 groups and underwent an experimental pain induction (i.e. cold pressure test). Pain tolerance, pain threshold, pain intensity and autonomic reactivity to nociceptive stimulation were assessed. The average pain intensity was significantly higher when participants were members of a group where at least one person stopped the procedure before its end. Regression analysis indicated that individual pain expectations and the strength of the relationship with group members are significant predictors of pain intensity. Individual's fear of pain and group relationship predicted mean heart rate and sympathovagal balance during procedure. Sharing with meaningful others an experience of pain seems to be able to influence individual pain perception and the general adaptation to the aversive condition.

DATABLITZ SESSIONS

DATABLITZ V

Friday, 12 May | 10:00 – 10:30 | Theater Hall

Social Aspects of Placebo Effects

Stefanie Meeuwis

Placebo stories: people's experiences with placebo effects in daily life

Experimental studies show that placebo effects can improve somatic symptoms including pain. In these studies, suggestions or learning procedures are often applied that explicitly trigger effects. Little is known about situations outside of the laboratory, for instance, whether people notice and utilize placebo effects in daily life. This semistructured survey study aimed to evaluate people's experiences with placebo effects in daily life. Qualitative and quantitative questions mapped multiple aspects of placebo effects, including their frequency, their affected symptoms/conditions and purported cause.
192 respondents completed the survey, of whom 110 (57.3%) indicated they experienced a placebo effect before and 19 (10.2%) observed it in others. Effects were reported most often in somatic symptoms (76.2%; eg, immediate pain relief after taking a painkiller) or wellbeing (68.5%; eg, feeling less stressed). Possible explanations that people provided for the placebo effects included information from others (eg, parents advising home-remedies), hope for pain relief, a positive mindset and trust in the healthcare professional.
Over half of the respondents indicated that they experienced/observed placebo effects in daily life. This provides opportunities for translating experimental effects into ecologically valid methods to maintain placebo effects, for instance in clinical practice.

Workshop Sessions I

Friday, 12 May
11:00 – 12:30
Theater Hall

WORKSHOP SESSIONS

WORKSHOP I

Friday, 12 May | 11:00 – 12:30 | Theater Hall

Contextual Factors and Predictors of Placebo Effects

Manfred Schedlowski, Prof.

Chair and introduction

Manfred Schedlowski is Professor of Medical Psychology and Behavioral Immunology at the University Hospital Essen. He is director of the Institute for Medical Psychology and Behavioral Immunology at the University Hospital Essen. The focus of his research is the analysis of the functional connections between the nervous system, the endocrine system and the immune system. Against this background, he and his research groups on the one hand deal with the phenomenon of classical conditioning of immune functions in the context of the placebo response and analyze the neurobiological and biochemical mechanisms as well as the clinical significance of the placebo and nocebo response. On the other hand, they analyze the effects of inflammatory processes in the body on neurocognitive and affective functions in the context of the pathophysiological processes of neuropsychiatric disorders such as depression or schizophrenia.

Website: https://medizinische-psychologie.uk-essen.de/index.php/de/ueber-uns/team/institutsleitung

WORKSHOP SESSIONS

WORKSHOP I

Friday, 12 May | 11:00 – 12:30 | Theater Hall

Contextual Factors and Predictors of Placebo Effects (virtual)

Kathryn Hall / Ed Bowen

Do Genes Influence Placebo Response? Utility of GWAS of placebo findings in clinical trials

Over the past decade, candidate gene analyses and genome-wide association studies (GWAS) have been used to examine the role of genetics in placebo response. Critical to any genetic association finding is reproducibility. While the finding of COMT association with placebo response in irritable bowel syndrome clinical trials has been replicated, findings in other diseases and experimental models have not been reproduced. This is in part because most placebo GWAS are conducted as secondary analyses of failed trials which because of cost and futility are not likely to be repeated. One way around the cHallenge of replicating expensive studies is to conduct GWAS of combined placebo arms from multiple studies in one disease area. While this approach has yielded several interesting findings in areas like major depressive disorder and asthma, further utilization of the findings still requires replication. Similarly, gene expression studies that examine how changes in gene expression influence placebo response have also yielded interesting findings, these studies also need replication before these findings can be translated to practice.

WORKSHOP SESSIONS

WORKSHOP I

Friday, 12 May | 11:00 – 12:30 | Theater Hall

Contextual Factors and Predictors of Placebo Effects

A Vania Apkarian

Neurobiological similarities and differences between clinical and laboratory placebo effects

An overview of the brain predictive and responsive circuitry to placebo manipulations in the laboratory setting in comparison to the clinical setting will be presented. I will then discuss mechanistic differences between the two types of placebo and their implications regarding practical decision making for clinical trials.

WORKSHOP SESSIONS

WORKSHOP I

Friday, 12 May | 11:00 – 12:30 | Theater Hall

Contextual Factors and Predictors of Placebo Effects

Dan-Mikael Ellingsen

An overview of the brain predictive and responsive circuitry to placebo manipulations in the laboratory setting in comparison to the clinical setting will be presented. I will then discuss mechanistic differences between the two types of placebo and their implications regarding practical decision making for clinical trials.

Background: Placebo effects are highly variable between individuals, but it is unclear whether dispositional psychological traits influence responsiveness to placebo. This preregistered meta-analysis and systematic review synthesized the literature investigating the association between personality traits and placebo effects.We collected published and nonpublished reports of correlation coefficients between placebo effects and personality trait scores. Based on 19 studies with 712 participants, we performed random-effects meta-analysis for 10 different traits, including behavioral inhibition, fun-seeking, goal-drive persistence, reward responsiveness, empathic concern, empathic fantasy, perspective-taking, personal distress, optimism, and anxiety. We followed up nonsignificant results with two one-sided tests for statistical equivalence to evaluate evidence for the null hypothesis. We did not find evidence of associations between any of these traits and magnitude of placebo effects, which was supported by equivalence tests. Furthermore, we did not find evidence for moderating factors placebo manipulation type (Conditioning, non-conditioning) or condition (pain, non-pain). Our meta-analysis did not support an association between personality traits and placebo effects, suggesting individual variability in placebo responding may be better explained by situational and learning factors, or dispositional factors beyond personality (e.g. genetic or brain phenotypes).

WORKSHOP SESSIONS

WORKSHOP I

Friday, 12 May | 11:00 – 12:30 | Theater Hall

Contextual Factors and Predictors of Placebo Effects

Lukas Basedow

Stress Influences Pre-treatment Expectations across Different Studies

Pre-treatment expectations regarding beneficial treatment effects and symptom worsening are important modulators of treatment outcome. Thus, manipulations of these treatment expectations can be valuable additions to standard clinical care. For the development of efficient expectation manipulations, it is important to explore how individual differences shape these expectations. We will present data from n = 748 participants from k = 7 studies involving assessments of expectations regarding a manipulation of pain or affective distress (funded by Deutsche Forschungsgemeinschaft (DFG) – 422744262). We assessed the influence of somatization tendency, perceived stress, state depression, and state anxiety on expectations of symptom improvement and symptom worsening. Our results show that perceived stress ($b = .228$, $p < .001$) and somatization ($b = -.202$, $p < .001$) predict improvement expectancy. Expected worsening of symptoms was not significantly predicted ($F = 1.289$, $p = .214$). As expected, higher levels of somatization are linked to reduced positive treatment expectations. However, surprisingly, high levels of perceived stress are associated with increased positive expectations.

WORKSHOP SESSIONS

WORKSHOP I

Friday, 12 May | 11:00 – 12:30 | Theater Hall

Contextual Factors and Predictors of Placebo Effects

Lauren Howe

White patients' physical responses to healthcare treatments are influenced by provider race and gender

The healthcare workforce in the United States is becoming increasingly diverse. However, given the long-standing underrepresentation of people of color and women in the medical field, patients may still associate the concept of doctors with White men and may be physiologically less responsive to treatment administered by providers from other backgrounds. To investigate this, we varied the race and gender of the provider from which White patients received an identical placebo treatment for allergic reactions and measured patients' improvement in response. A total of 187 White patients experiencing a laboratory-induced allergic reaction interacted with a healthcare provider who applied a placebo cream to the reaction. Interactions were completely standardized except for the provider's race and gender. Patients were randomly assigned to interact with a provider who was a man or a woman and Asian, Black, or White. A fully blinded research assistant measured the change in the size of patients' allergic reaction after cream administration. Results indicated that White patients showed a weaker placebo response when it was administered by women or Black providers. We explore several potential explanations and discuss the implications of problematic race and gender dynamics that can endure "under the skin."

Workshop Sessions II

Friday, 12 May
11:00 – 12:30
Foyer

WORKSHOP SESSIONS

WORKSHOP II

Friday, 12 May | 11:00 – 12:30 | Foyer

Open-label Placebo Effects and Studies in Children

Katja Weimer, PhD

Chair and introduction

Katja Weimer is a postdoc at Ulm University Hospital and scientific coordinator of the Translational Research WG. Her research includes the effects of chronic stress and traumatic experiences as risk factors for later psychosomatic and somatic diseases, such as depression, anxiety and pain disorders, cardiovascular dysfunction and systemic inflammatory reactions. In addition, the research group is concerned with the effects of expectations and learning mechanisms on psychosomatic symptoms such as pain, stress, and anxiety.

Website: https://www.uniklinik-ulm.de/psychosomatische-medizin-und-psychotherapie/ag-translationale-forschung.html

WORKSHOP SESSIONS

WORKSHOP II

Friday, 12 May | 11:00 – 12:30 | Foyer

Open-label Placebo Effects and Studies in Children

J. Leon Morales-Quezada

Conditioning & Open-Label Placebo (COLP) in inpatient rehabilitation

The management and control of pain are one of medicine's biggest cHallenges in rehabilitation medicine. Overall, opioid usage in patients hospitalized in the Comprehensive Rehabilitation Program still is high due to the complexity of their injuries, including polytrauma, burn injuries, amputations or other severe injuries, which require appropriate and aggressive pain management. Moreover, these side effects have a detrimental impact for the recovery of these patients. The use of placebos in the clinical arena represents an ethical cHallenge as deception or concealment is usually thought to be necessary; an alternative strategy to harness placebo effects is the use of open-label prescribed placebos. Pharmacological conditioning dose extension capitalizes on classic conditioning mechanisms and differential reinforcement rates of the medication. The reinforcement rate is gradually decreased (i.e., the pharmacological agent is intermittently replaced by a placebo). Therefore, placebo effects can contribute to the pharmacological effects of a drug and help to sustain therapeutic responses. In this workshop, data from conditioning open-label placebo (COLP) for opioid dose reduction will be presented. Models for clinical implementation, and mechanisms behind pharmacological conditioning in severe pain are going to be also discussed.

WORKSHOP SESSIONS

WORKSHOP II

Friday, 12 May | 11:00 – 12:30 | Foyer

Open-label Placebo Effects and Studies in Children

Christiane Hermann

Why does it not work? Methodological lessons to be learned when experimentally investigating placebo effects in childrens

Background. Studying placebo/nocebo effects in special populations such as children requires to adjust or newly develop experimental designs. Yet, failures to experimentally demonstrate such effects are rarely reported. However, such trials combined with a detailed methodological scrutiny may provide important information about possible determinants of placebo/nocebo effects. Methods. A novel hand-withdrawal method we had developed for children was first successfully validated in adults. Subsequently, this method was then tested in school-aged children. In a second series of experiments, an adapted version of this method was piloted in kindergarten children. In both series, hypoalgesia was tested using heat pain. Subjective pain intensity, pain threshold or tolerance served as outcome. Results. We identified several procedural aspects such as the potential influence of the control condition, differences in children's handling the apparatus, behavioral vs. verbal measures, or subtle effects of instructions and the setting which impact on obtaining a placebo effects in children, especially very young ones. Conclusions. Our findings suggest that experimentally inducing placebo effects in children relies on several rather fundamental design features. Implications with regard to the robustness of the obtained effects, replication, and the demonstration of age-related differences will be discussed.

WORKSHOP SESSIONS

WORKSHOP II

Friday, 12 May | 11:00 – 12:30 | Foyer

Open-label Placebo Effects and Studies in Children

Henriet van Middendorp

Pediatric healthcare providers' knowledge and opinions about placebo-related treatment applications in child hospital care

Most children experience anxiety, stress, and pain during hospital procedures. Placebo-related treatment applications could be added-on to regular treatment to improve hospital experiences. What pediatric healthcare providers know and think about placebo effects and placebo-related applications to optimize child healthcare was examined in an online questionnaire study in 150 healthcare professionals(87% female;40% physicians,31% nurses,11% medical psychologists,5% pedagogical staff). Higher placebo knowledge (M6.1±0.9 of 7 items) was associated with higher acceptability(r=.30,p<.001). Acceptability (M7.6±1.3 on 0-10NRS) and expected effectiveness (M7.3±1.5) increased after reading about placebo-related applications(p-values≤.004). Nurses had lower placebo knowledge, acceptability, and expected effectivity than physicians and psychologists(p-values≤.04). Acceptability was higher for chronic than acute conditions(p<.001), with no consistent differences for child gender and age. This study showed relatively positive opinions about placebo-related applications in child hospital care by pediatric healthcare providers, which decreased towards more 'misleading' applications. The results suggest the potential effectiveness of education on optimization of placebo and minimization of nocebo effects in children, especially for nurses.

WORKSHOP SESSIONS

WORKSHOP II

Friday, 12 May | 11:00 – 12:30 | Foyer

Open-label Placebo Effects and Studies in Children

Anne Schienle

Open-label placebos as adjunctive therapy for patients with depression

Placebos prescribed as ‚regular' medication can reduce symptoms of depression. However, using a placebo without patients' informed consent presents ethical issues. Therefore, the present study assessed the efficacy of an open-label placebo (OLP), which was administered concurrently with cognitive-behavioral therapy (CBT). Sixty patients (mean age: 48 years) diagnosed with major depressive disorder were randomly assigned to a 4-week CBT outpatient program with or without daily OLP treatment. The patients were assessed directly before and after the program as well as three months after the therapy. Compared to the CBT group, the CBT + OLP group showed a greater reduction in symptoms of depression at the end of the program. Changes in categories pertaining to severity of depression did not differ between groups. All patients completed the program. Noncompliance with the follow-up appointment differed significantly between CBT + OLP (27%) and CBT (7%). Noncompliance was associated with a negative evaluation of the OLP. The OLP intervention reduced symptoms of depression, however, these changes were not clinically meaningful. The OLP increased the risk for loss to follow-up. The high dropout rate in the present study raises questions concerning the acceptance of OLPs in the treatment of depression.

WORKSHOP SESSIONS

WORKSHOP II

Friday, 12 May | 11:00 – 12:30 | Foyer

Open-label Placebo Effects and Studies in Children

Sarah Buergler

Effects of open-label placebos in clinical and nonclinical samples: A systematic review and network meta-analysis

In recent years, numerous studies investigated the potential of open-label placebos (OLPs). However, it is unclear whether the effects are different across (1) clinical vs. nonclinical populations, (2) comparators, (3) modalities and (4) expectation. Therefore, network meta-analyses (NMA) were conducted to evaluate distinct magnitudes of effects. Systematic searches were carried out. RCTs comparing OLPs to controls were included. 6'832 records were screened. Two networks were created and assessed in random-effects models. Either primary or most informative outcomes were extracted.Twelve trials were eligible for the nonclinical, 25 trials for the clinical network. In the nonclinical network, deceptive placebos (DP) and OLPs nasal were more (SMD=0.49;0.43) and OLPs without expectation less efficacious than NT (SMD=-0.62). In the clinical network, psychological intervention, conditioned OLP-pills, DP, and OLP-pills outperformed NT (SMD=0.46–1.96). OLP-pills and DPs showed higher effects as OLPs without expectations (SMD=0.49;0.79).NMAs revealed that OLPs are more beneficial for clinical populations compared to nonclinical. The kind of comparator and administration route had no substantial impact on effects. Treatment expectations were found to be essential for OLP efficacy.

WORKSHOP SESSIONS

WORKSHOP II

Friday, 12 May | 11:00 – 12:30 | Foyer

Open-label Placebo Effects and Studies in Children

Antje Frey Nascimento

Open-label Placebo Intervention for Women with Premenstrual Syndrome: A Randomized Controlled Trial

So far, no study has examined the effect of an open-label placebo (OLP) intervention on premenstrual syndrome (PMS), although PMS appears considerably susceptible to placebo effects. We conducted a randomized controlled trial with 150 women with PMS, examining the effect of an OLP intervention on PMS. The study entailed a treatment as usual (TAU; N=50), an OLP intervention without a treatment rationale (OLP-; N=50), and an OLP intervention with a treatment rationale group (OLP+; N=50). Primary outcomes were symptom intensity and interference assessed across three menstrual cycles. Symptom intensity decreased significantly between groups (b = -7.42, SE = 1.97, p<.001), showing a large effect (d=1.10). OLP+ showed the highest decrease of symptom intensity, followed by OLP-, while TAU exhibited the smallest decrease. Interference decreased significantly between groups (b = -0.92, SE = 0.36, p=.011), showing a large effect (d=0.88). OLP+ showed the highest decrease of interference, followed by OLP-, while TAU exhibited the smallest decrease. Our findings indicate that women with PMS benefit from an OLP intervention, while the treatment rationale effect highlights the potential of comprehensive patient elucidation in clinical practice.

Keynote Lectures

Friday, 12 May
14:00 – 15:00
Theater Hall

KEYNOTE LECTURES

KEYNOTE LECTURE II

Friday, 12 May | 14:00 – 15:00 | Theater Hall

“Lifetime Achievemet Award“

Plenary Session VI

Friday, 12 May
15:00 – 16:15
Theater Hall

PLENARY SESSIONS

PLENARY SESSION VI

Friday, 12 May | 15:00 – 16:15 | Theater Hall

Open-label Placebo: A Critical Evaluation

Ulrike Bingel, Prof.

University of Duisburg-Essen, Germany

Chair and introduction

Ulrike Bingel is a Professor for Clinical Neurosciences at the University of Duisburg-Essen in Germany. Ulrike's research focuses on systems neuroscience and particularly on the interface between pain processing of the central nervous system and cognitive neuroscience. Her work has revealed critical insights into the neurobiological basis of placebo and nocebo responses, their interaction with active pharmacological treatments and implications of these findings for clinical practice. Leveraging behavioral paradigms, pharmacological modulations, as well as functional and structural brain imaging and being particularly intrigued by the reciprocal effects of pain and cognition, she and her group have a strong focus on translational questions such as the role of expectations and prior experiences on analgesic treatment outcomes.

Twitter: @bingellab
Website: https://www.bingellab.de/

PLENARY SESSIONS

PLENARY SESSION VI

Friday, 12 May | 15:00 – 16:15 | Theater Hall

Open-label Placebo: A Critical Evaluation

Open Label Placebo: Confessions, Critiques, and Correctives

John Kelley, PhD

Harvard Medical School, USA

Abstract description

The first successful randomized clinical trial of open-label placebos was published in 2010. Since then, a dozen randomized trials have provided evidence that open-label placebos are a safe and effective treatment for a number of medical conditions, including irritable bowel syndrome, chronic low back pain, osteoarthritis of the knee, cancer-related fatigue, allergic rhinitis, menopausal hot flashes, and migraine headaches. But here is my confession: despite having served as a collaborator and co-author on several of these clinical trials, I still harbor doubts. Are the control conditions sufficiently robust? Should the lack of blinding undermine our confidence in the results? Are the effect sizes sufficiently large to warrant the use of open-label placebos? Do the apparent clinical benefits persist over time? Will clinicians be willing to openly prescribe placebos in routine clinical practice? Is the open-label placebo paradigm necessary, or are there other non-pharmaceutical methods for delivering similar healthcare benefits? And finally, although inert pills cannot, in and of themselves, produce side effects, does the use of open-label placebos carry risks of harm (e.g., could it undermine the patient-clinician relationship?). In this talk I will discuss these critiques in detail; and I will offer some correctives to move us toward the goal of either strengthening the evidentiary basis for open-label placebos and bringing them into mainstream clinical practice, or determining that we should move in a different direction, using what we have learned from the research on open-label placebos, but applying that knowledge in a different, more effective or more acceptable fashion.

Bio

John Kelley is Deputy Director of the Program in Placebo Studies at Harvard Medical School and Distinguished Professor of Psychology at Endicott College. He is also a past president of the Society for Interdisciplinary Placebo Studies. Professor Kelley and his colleagues investigate placebo and nocebo effects in medical and psychiatric disorders, with a particular focus on patient-clinician communication, the therapeutic relationship, and the role of expectancies in healthcare outcomes. His more recent research interests include open-label placebo and authorized concealment, which have the potential to reduce medication doses and decrease side effects, and perhaps even ameliorate the opioid crisis.

Website: http://programinplacebostudies.org/

PLENARY SESSIONS

PLENARY SESSION VI

Friday, 12 May | 15:00 – 16:15 | Theater Hall

Open-label Placebo: A Critical Evaluation (virtual)
Open-label placebo: a disruptive paradigm for medicine and placebo studies.

Ted Kaptchuk, PhD

Harvard Medical School, Harvard University, USA

Abstract description

Biomedicine and placebo studies held a deeply belief that placebos “work” only placebos are administered with concealment in RCT or deceptive in laboratory experiments. Patients needed to believe that they were receiving medication for placebos to have benefits. A small and short OLP RCT of 2010 and a series of at least a dozen other such clinical trials has shown that placebo pills alone elicit benefits without deception, concealment or explicit conditioning with pharmaceuticals. Transparency and honesty were compatible with placebos treatment. As it generally does with anything placebo, biomedicine has so far ignored these findings. Placebo researchers are still trying to digest these data and its implications for placebo practice and theory. I will briefly mention how, in my opinion, OLP, what I would call the naked ritual of healing, may promote a broader understanding of placebo and, at the same time, be disruptive.

Bio

Ted J. Kaptchuk is a Professor of Medicine and of Global Health and Social Medicine at Harvard Medical School in the US. Ted's career has spanned multiple disciplines, drawing upon concepts, research designs and analytical methods from the humanities and basic and clinical and social sciences. He investigates the impact of placebos in various illnesses, the neurobiology of placebo effects, the experience of patients being treated by placebo, open-label placebos, and various psychological, cultural, sociological and philosophical dimensions of placebos. Furthermore, he is doing theoretical work on the histories of placebo controls and the placebo effect, and significant ethical analyses of the use of placebos in clinical practice and research.

PLENARY SESSIONS

PLENARY SESSION VI

Friday, 12 May | 15:00 – 16:15 | Theater Hall

Open-label Placebo: A Critical Evaluation

Mind over matter: Potential mechanisms of open-label placebo effects

Julia Haas, Dr. rer. nat.

Beth Israel Deaconess Medical Center,
Harvard Medical School, Harvard University, USA

Abstract description

Open-label placebo (OLP) treatment has demonstrated efficacy for many chronic and psychosomatic conditions. The underlying mechanisms of this paradoxical intervention are unclear, and the role of positive expectancy remains subject of debate. To explore potential OLP mechanisms, we carried out two studies that were embedded in a 6-week RCT (N = 308) comparing the effects of OLP to double-blind placebo (DBP) in irritable bowel syndrome. In study 1, n = 33 participants were interviewed about their experience with OLP or DBP. While none of the interviewees mentioned treatment expectations, they often discussed hope and curiosity as important factors. Unlike DBP participants, who easily accepted their treatment, often with enthusiasm, OLP participants expressed more ambivalence, neutrality or uncertainty. Furthermore, the counter-intuitive intervention seemed to prompt self-reflection and observation of their symptoms, behaviors and habits. While DBP participants showed a passive commitment to their treatment, OLP participants seemed to be more actively engaged. These qualitative results are supported by study 2, a hierarchical linear regression analysis of psychological OLP and DBP predictors in the above-mentioned RCT (n = 210). Here, higher pain catastrophizing was associated with less OLP improvement (ß = -0.46; p = .005), while higher visceral sensitivity was associated with better OLP improvement (ß = 0.37; p = .030), suggesting that a sense of hope, self-efficacy and flexible thinking may enhance OLP effects. Neither pain catastrophizing nor visceral sensitivity played a predictive role in

DBP. These findings indicate thatdifferent psychological mechanisms may be involved in DBP and OLP effects.

Bio

Julia Haas is a clinical psychologist, therapist and postdoctoral researcher at the Beth Israel Deaconess Medical Center and the Harvard Medical School in the US. Her research interests include placebo effects in mental health and psychosomatic conditions (e.g., insomnia and depression) as well as their underlying psychosocial placebo mechanisms. She is specifically involved in research on open-label placebos in irritable-bowel syndrome and studies comparing the effectivity of deceptive vs. honest placebos.

Datablitz Session VI

Friday, 12 May
16:15 - 16:50
Theater Hall

DATABLITZ SESSIONS

DATABLITZ VI

Friday, 12 May | 16:15 - 16:50 | Theater Hall

Open-label Placebo: A Critical Evaluation

Kirsten Barnes

The Role of Positive Information Provision and Baseline Symptomology on Open-Label Placebo Effects

The efficacy of open-label placebos (OLPs) appears robust among clinical samples. However, evidence regarding OLPs in non-clinical samples, as well as without a convincing rationale, appears equivocal. Methods: Healthy participants (N=102) completed a 6-day course of OLP pills with information provision (OLP-plus: N=35), without information (OLP-only: N=35), or were assigned no-treatment (N=32). OLP pills were described as enhancing physical (symptoms and sleep) and psychological (positive and negative emotional) wellbeing. Wellbeing was assessed at baseline and day 6. Expectancies and adherence were measured. OLP administration interacted with baseline wellbeing. The OLP-plus group demonstrated increased wellbeing on all outcomes except positive emotions, but only when they reported decreased baseline wellbeing. OLP-only and control groups did not differ. The OLP-plus group demonstrated elevated expectancies, that mediated the OLP effect on physical symptoms relative to control, but when wellbeing was lower than average at baseline (i.e., moderated-mediation). Conclusions: Results demonstrate the importance of information provided with OLPs. The moderating effect of baseline outcomes may reconcile inconsistent results concerning clinical and non-clinical samples.

DATABLITZ SESSIONS

DATABLITZ VI

Friday, 12 May | 16:15 - 16:50 | Theater Hall

Open-label Placebo: A Critical Evaluation

Marco Valerio

Rituals and open-label placebo effects

Rituals, defined as sequences of repeated actions with symbolic value for the performer, are ubiquitous in every aspect of human life. Even health treatments, whether traditional, alternative, or evidence-based, present important ritualistic features (e.g., taking a pill at the same time and with the same actions) that may enhance the placebo effect associated with these treatments. Two studies, involving 294 participants and delivered remotely, investigated whether performing a ritual could increase open-label placebo (OLP) effects in wellbeing. Three groups were compared: OLPs taken with a ritual; OLPs taken without any ritual; and no treatment control. Mental wellbeing, emotional distress, vigour-fatigue, and sleep quality were assessed at baseline and after six days of OLP treatment. In both studies, participants consuming OLPs reported greater well-being compared to the control group. Moreover, participants taking OLPs with a ritual reported greater sleep quality compared with participants taking OLPs without ritual. Only in the second study, performing the ritual also led to a reduction in emotional distress. Therefore, adding rituals to OLPs consumption may enhance placebo effects in sleep and emotional distress. These results provide useful insights to improve the placebo effect component of both placebo and active medical treatments.

DATABLITZ SESSIONS

DATABLITZ VI

Friday, 12 May | 16:15 - 16:50 | Theater Hall

Open-label Placebo: A Critical Evaluation

Octavia Zahrt

Effects of Wearable Fitness Trackers and Activity Adequacy Mindsets on Affect, Behavior and Health: A Longitudinal Randomized Controlled Trial

Initial evidence suggests that mindsets about the adequacy and health consequences of one's physical activity (activity adequacy mindsets, AAMs) can shape health through placebo effects. This research examined how fitness trackers and meta-mindset interventions influence AAMs, affect, behavior and health. 162 participants received fitness trackers for 5 weeks. After a baseline week without step count feedback, participants were randomly assigned to receive either accurate step count, 40% deflated step count, 40% inflated step count, or accurate step count + a meta-mindset intervention encouraging more positive AAMs. Participants receiving accurate steps adopted more positive AAMs and healthier diets, experienced improved mental health and aerobic capacity, but also reduced functional health. Participants receiving deflated steps adopted more negative AAMs and unhealthier diets, experienced more negative affect and mental health, increased blood pressure and heart rate (compared to participants receiving accurate steps). Inflated steps had no systematic effects. Participants receiving the meta-mindset intervention experienced improved AAM, affect, functional health, and self-reported physical activity (compared to participants receiving accurate steps only). Actual step count remained unchanged across conditions.AAMs - induced by trackers or adopted deliberately - can influence affect, behavior, and health, independent of actual physical activity.

DATABLITZ SESSIONS

DATABLITZ VI

Friday, 12 May | 16:15 - 16:50 | Theater Hall

Open-label Placebo: A Critical Evaluation

Biya Tang

Choice Over Placebo Administration Enhances Open-label Placebo Analgesia

Research suggests that placebos have been frequently used without patients' knowledge in clinical practice, which raises ethical concerns as deception violates patient autonomy. A growing body of research revealed that open-label placebos (OLPs) are also effective in the treatment of several medical conditions, including chronic back pain, showing that OLPs can be an ethical alternative to deceptive placebos. Yet, important questions remains regarding how we can capitalize on OLPs to improve patient outcomes. Choice is shown to have the capacity of enhancing the placebo effect when placebos are delivered deceptively, but the potential benefit of choice on OLPs is unknown. This study thus investigated whether and to what extent choice over placebo administration facilitated OLP analgesia using a electro-cutaneous pain paradigm. Healthy participants were randomly assigned to either receive a placebo treatment and have choice over placebo administration, receive a placebo treatment without choice, or a Natural History control group. The most important finding was that participants who chose when to initiate the placebo treatment exhibited significantly greater OLP analgesia than those without choice. Our findings suggest when OLPs are involved in treatment plans, choice has the potential to improve clinical pain outcomes by enhancing OLP analgesia.

DATABLITZ SESSIONS

DATABLITZ VI

Friday, 12 May | 16:15 - 16:50 | Theater Hall

Open-label Placebo: A Critical Evaluation

Matthijs de Leeuw

Open-Label Placebo Treatment for Acute Postoperative Pain: Preliminary Results of a Randomized Controlled Trial

Opioids are the primary pharmacotherapy for postoperative analgesia. Therefore, minimization of opioid-related side effects remains a key cHallenge. Open-label placebos (OLP) have been studied and found to be efficacious in various conditions. However, evidence on OLP effects in acute pain is limited. This talk presents the design and results of an ongoing RCT (NCT04339023), investigating the effect of OLPs on acute postoperative pain and corresponding opioid consumption. Two OLP-injections are added for two days to treatment-as-usual (TAU; i.e., morphine patient-controlled analgesia pump) and compared to TAU alone in patients suffering from postoperative pain following dorsal lumbar interbody fusion. Primary outcome is assessed by the amount of self-administered morphine during the first two postoperative days. Until May 2023, 70 participants are expected to be enrolled. Preliminary findings will be reported. Conclusion: In the light of the current cHallenges in postoperative pain management and the promising results of experimental OLP studies in acute pain, an OLP intervention could provide a means of harnessing analgesic placebo effects. Thereby, adding OLP to TAU could lead to a reduction in postoperative opioid consumption and related side-effects, without any loss in pain management efficacy.

Workshops Session III

Saturday, 13 May
09:00 – 10:30
Theater Hall

WORKSHOP SESSIONS

WORKSHOP III

Saturday, 13 May | 09:00 – 10:30 | Theater Hall

Placebo Effects in Clinical Studies

Julian Kleine-Borgmann, MD

Chair and introduction

Julian Kleine-Borgmann is an assistant physician in the Department of Neurology at the University Medical Center Essen and part of the research group led by Prof. Dr. Bingel. His research focuses on the influence of cognitive processes on the development and processing of pain. and the role of cognition in analgesic treatment outcomes and open-label placebo treatments.

Website: https://www.bingellab.de/people/

WORKSHOP SESSIONS

WORKSHOP III

Saturday, 13 May | 09:00 – 10:30 | Theater Hall

Placebo Effects in Clinical Studies

Yvonne Nestoriuc

Optimized informed consent for psychotherapy: a randomized-controlled trial

Beyond legal and ethical purposes, informed consent has the potential to influence treatment expectations. Trials investigating informed consent procedures for psychotherapy are missing. We determine the efficacy and safety of a newly developed optimized informed consent consultation (OIC). In this randomized trial, 122 adults with mental disorders, confirmed by structured interview, were randomized to treatment as usual (TAU; n=61) or TAU plus a one-session OIC (n=61) utilizing expectation-management and framing. Primary outcome was treatment expectations at 2-week follow-up.Participants receiving OIC showed greater increases in positive treatment expectations compared to TAU (mean difference: 0.70, 95%CI, 0.35 to 1.05, d=0.73). Likewise, OIC positively influenced motivation, adherence intention, and capacity to consent with medium and decisional conflicts, and knowledge with high effect sizes. No significant group differences resulted for adverse events, except for fear of negative effects at post-intervention (OIC: 15.00% vs. TAU: 3.45%).Explaining to patients how psychotherapy works via a short consultation was effective in strengthening treatment expectations and decision-making in a non-harmful way. Further trials should clarify whether this effectively translates to better psychotherapy outcomes.

WORKSHOP SESSIONS

WORKSHOP III

Saturday, 13 May | 09:00 – 10:30 | Theater Hall

Placebo Effects in Clinical Studies

Regine Klinger

Effects of positive expectation management in pain treatment

Significant progress has been made in the investigation of the placebo effects. Most of our knowledge about the neurobiology and neuropsychology of this phenomenon comes from the field of pain and analgesia. A critical impetus for the clinical implications of placebo research is the closer examination of treatment expectations, as these play a critical mediating role in the formation of placebo effects. Positive treatment expectations appear to significantly improve pain treatment outcomes. The question here, however, is (1) whether a positive treatment expectation leads to a positive treatment outcome in general or can also have opposite effects when associated with “bad“ treatments, (2) how to adequately design positive expectation management and (3) whether there is clinical evidence for this approach. The goal of this workshop is to identify ways of positively, but realistically, aligning pain patients‘ expectations regarding their pain management. Upon completion of this session, attendees will be able to understand and bring together three different aspects (a) analysis of the most relevant psychological strategies to induce expectation and bodily placebo-related changes; (b) best evidence of significant placebo analgesic effects due to treatment expectation and (c) implications for clinical practice.

WORKSHOP SESSIONS

WORKSHOP III

Saturday, 13 May | 09:00 – 10:30 | Theater Hall

Placebo Effects in Clinical Studies

David Hohenschurz-Schmidt

A new Guideline for Control Interventions in Efficacy and Mechanistic Trials of Physical, Psychological, and Self-Management Therapies - The CoPPS Statement and Its Practical Application

Specifically designed control interventions (also known as 'placebo controls') can account for expectation effects in clinical trials and test treatment mechanisms. How control interventions are designed, conducted, and reported is fundamental when interpreting efficacy and mechanistic clinical trials of physical, psychological, and self-management interventions. The newly developed CoPPS statement establishes a quality standard in the field and provides a reporting checklist for control interventions to enhance research transparency, usefulness, and rigour. This guideline was developed using a three-round Delphi study with 64 experts in placebo research and/or clinical trials of physical, psychological, and self-management interventions for pain. Development also involved a systematic review, interviews with people experiencing pain, and consensus meetings.
This presentation will focus on communicating the core recommendations of CoPPS, such as a design principle for control interventions, and best-practice approaches to the conceptual design of control interventions, pre-trial testing, stakeholder involvement, and quality assurance during implementation. Briefly, the guideline's practical application will be discussed by means examples from a study of psychologically-informed manual therapy for people with painful diabetic neuropathy, and several student projects from the manual therapy field.

WORKSHOP SESSIONS

WORKSHOP III

Saturday, 13 May | 09:00 – 10:30 | Theater Hall

Placebo Effects in Clinical Studies

Melissa Boswell

The effect of changing mindsets on pain and physical activity levels in individuals with knee osteoarthritis

Knee osteoarthritis is a common and debilitating disease associated with knee pain and stiffness. Interestingly, the pain one experiences does not correlate with physiological osteoarthritis severity as determined by imaging. The relationship between osteoarthritis and knee symptoms is related to physical factors, such as co-morbidities and BMI, and psychological factors, such as beliefs about osteoarthritis and pain. Our work has shown that mindsets about osteoarthritis, which include these beliefs and assumptions and orient individuals to a set of attributions, expectations, and goals, are related to symptoms and whether one engages in physical activity as a management strategy. Aiming to now change mindsets, we developed a digital, scalable mindset intervention for individuals with knee osteoarthritis. In pilot testing of the intervention, mindsets about osteoarthritis and exercise significantly increased to more adaptive mindsets. We then further evaluated if this intervention improves pain and engagement in physical activity more than typically provided educational content in patients with knee osteoarthritis in a clinical trial. We will share the development, testing, and results of this study and the promising notion that by changing the beliefs and expectations about osteoarthritis, we can improve one's experience with osteoarthritis, its symptoms, and engagement in its management.

WORKSHOP SESSIONS

WORKSHOP III

Saturday, 13 May | 09:00 – 10:30 | Theater Hall

Placebo Effects in Clinical Studies

Jeremy Howick

Why Placebo Studies Needs its Second Revolution

Placebo studies has undergone one successful revolution and it now needs another one. Over the last 10 years, the number of studies on placebos has roughly doubled, while researchers in the area have organized themselves into the international Society for Interdisciplinary Placebo Studies (SIPS), whose membership has mushroomed from eight to more than 500. Many initial controversies surrounding placebo effects, most notably the controversy about whether placebo effects exist have been resolved in favour of placebo researchers. In parallel, high-profile trials on placebos have been published in eminent journals such as the BMJ, The Lancet, and the New England Journal of Medicine. Collectively, these successes can be dubbed the 1st revolution in placebo studies. Because of its success, the knowledge gained by placebo researchers can now be used to benefit patients (and avoid “nocebo” harms). Yet, relatively little effort is being placed putting the knowledge into practice. In this presentation I argue that the failure to put the knowledge “to work” borders on being unethical and spell out a plan to put the research into practice. The needed 2nd revolution in placebo studies is one that focuses on putting placebo research for patient benefit.

WORKSHOP SESSIONS

WORKSHOP III

Saturday, 13 May | 09:00 – 10:30 | Theater Hall

Placebo Effects in Clinical Studies

Sophie Rosenkjaer

The balanced placebo design: Placebo effects in spinal cord stimulation

Spinal cord stimulation (SCS) is a neuromodulation treatment which is increasingly used in several chronic neuropathic pain conditions. Despite its widespread clinical use, a recent Cochrane review showed that the evidence base of SCS is uncertain, and a recent randomized clinical trial showed no significant differences between SCS and placebo stimulation. This study aims to investigate clinical effects of active SCS treatment separately from placebo effects. Methods: A repeated-measures study using the balanced placebo design will be used to investigate placebo and active treatment effects, separately and in combination. Twenty-five patients will evaluate their clinical pain, in a 2x2 design with paresthesia-free stimulation activated and deactivated and suggestions about activation and deactivation. Furthermore, patients will be interviewed about their experience and pain relief with SCS.The study estimates whether the clinical effect of SCS outperform potential effects of placebo treatment on chronic neuropathic pain, while including the perspective and experience of patients. Preliminary study results will be presented at the SIPS 2023 conference in Duisburg, Germany. The study presents the first application of the balanced placebo design to test effects of SCS and placebo on chronic pain.

Workshops Session IV

Saturday, 13 May
09:00 – 10:30
Foyer

WORKSHOP SESSIONS

WORKSHOP IV

Saturday, 13 May | 09:00 – 10:30 | Foyer

Animals and Basic mechanism

Tamas Spisak, PhD

Chair and introduction

Tamas Spisak is Junior Research Group Leader and Head of the Laboratory of Predictive Neuroimaging at the University Hospital Essen. He is working on whether imaging techniques can predict treatment expectancy on therapy success. In the future, it should be possible to use them to predict the influence of treatment expectancy and to optimize therapy on an individual basis.

Websites:
https://treatment-expectation.de/projekte-people/forschungsprojekte/z03
https://pni-lab.github.io/author/tamas-spisak/

WORKSHOP SESSIONS

WORKSHOP IV

Saturday, 13 May | 09:00 – 10:30 | Foyer

Animals and Basic mechanism

Martin Hadamitzky

Harnessing associative learning paradigms to optimize drug treatment

Clinical conditions such as inflammatory diseases, pain, or depression often require continuous treatment with respective drugs to diminish symptoms, whereas the amount of unwanted drug side effects detrimentally affects the patients' quality of life. In the search to overcome the disadvantage of these side effects, reframing continuous drug intake as a learning process may open a new path for treatment optimization. Against this background, the growing knowledge about the neuropsychological mechanisms of associative learning and memory provides a number of fascinating cHallenges and opportunities which allow the optimal use of the still largely under-studied phenomenon of "learned" placebo responses. Employing the efferent and afferent communication pathways between the brain and other physiological systems, together with end-organ functions as hardware (to borrow IT terminology) and sophisticated associative learning protocols as software, behavioral conditioning of pharmacological responses might serve as an activator of the body-own pharmacy and thus a valuable supportive treatment tool for the patient's benefit. This talk outlines the development and application of paradigms in experimental animals, healthy subjects, and patient populations with a focus on learned placebo responses in the immune system.

WORKSHOP SESSIONS

WORKSHOP IV

Saturday, 13 May | 09:00 – 10:30 | Foyer

Animals and Basic mechanism

Damien Boorman

A New Animal Model of Response-Conditioned Placebo Analgesia and Nocebo Hyperalgesia in Rats with Chronic Neuropathic Pain

Unlike human studies, animal models of placebo analgesia can inspect the underlying neurobiology at cellular levels. Placebo analgesic responses have been demonstrated in nerve-injured rats using pharmacological-conditioning. Whether placebo analgesia can be elicited from nerve-injured rats using clinically relevant response-conditioning techniques is unknown. 96 rats received sciatic nerve injuries or sham surgery. Rats underwent a 5-day response-conditioning procedure, whereby contextual cues were paired with either a high, low or moderate intensity thermal stimulus using a hot/cold plate. The following day (Test Day), all rats were tested at the moderate intensity stimulus. On Test Day, rats conditioned to the low intensity stimulus performed reduced pain behaviours, while rats conditioned to the high intensity stimulus performed increased pain behaviours ($p=0.004$, $d=1.43$, Welch's unpaired t-test), indicating placebo and nocebo effects, respectively. Here we present a novel animal model of response-conditioned placebo analgesia and nocebo hyperalgesia in the context of chronic pain. This model can now be used to further investigate the cellular mechanisms underlying these phenomena, while also providing an essential preclinical resource for the development of novel treatments that exploit placebo analgesia.

WORKSHOP SESSIONS

WORKSHOP IV

Saturday, 13 May | 09:00 – 10:30 | Foyer

Animals and Basic mechanism

Gregory Scherrer

A prefrontal cortico-ponto-cerebellar circuit for placebo analgesia

Pain is a multidimensional experience with sensory, emotional and cognitive components. Although the neural circuits and dynamics underlying the sensory and emotional dimensions of pain have been elucidated by us (Corder, Ahanonu, et al., Science, 2019) and others, our understanding of the cognitive dimension of pain remains comparatively limited. We created a behavioral assay that models placebo analgesia by conditioning mice to expect pain relief when moving from a chamber with a heated floor to another chamber. In this assay, an expectation of pain relief induces analgesia that is mediated by endogenous opioids. Calcium imaging of neural activity in freely moving mice revealed that expectations of pain relief boost the activity of rACC⟶Pn neurons and potentiate neurotransmission in this pathway. Physiologically, this conditioning unbalances the excitation and inhibition of rACC⟶Pn neurons, impairing feedforward inhibition, and facilitating burst firing and postsynaptic potentiation. Transcriptomic studies of Pn neurons revealed an extraordinary abundance of opioid receptors in these cells, consistent with their newfound key role in pain modulation. Inhibition of either rACC⟶Pn or postsynaptic opioid receptor-expressing Pn neurons disrupts placebo analgesia and increases pain. Collectively, these findings uncover circuit and synaptic mechanisms underlying placebo analgesia and open the possibility of acting on this rACC⟶Pn pathway to produce pain relief.

WORKSHOP SESSIONS

WORKSHOP IV

Saturday, 13 May | 09:00 – 10:30 | Foyer

Animals and Basic mechanism

Helena Hartmann / Tamas Spisak

Meta-analytic evidence for distinct neural mechanisms of conditioned vs verbally induced placebo analgesia

Placebo effects can be induced in various ways. Verbal instruction and conditioning procedures alone or in combination represent the most commonly used approaches in experimental settings, whereby conditioning procedures consistently enhance the efficacy of placebo treatments. However, the underlying neural mechanisms are less well understood. Using a systematic meta-analysis of individual participant data from 16 within-subject placebo neuroimaging studies (total n = 409, we aimed to identify differences in placebo analgesia (PA)-associated brain activity based on whether conditioning was used in the PA induction or not. Analyzing rank-harmonized individual-level data in a permutation testing framework (i) replicated our previous meta-analytic findings of typical placebo-related brain activity changes with a different subsample and methodology and (ii) revealed distinct neural correlates of conditioned as compared to verbally induced analgesia. Conditioned PA was associated with stronger activity in prefrontal, anterior cingulate, and cerebellar regions, and reduced activity in primary somatosensory cortex, supramarginal gyrus, and posterior insula as compared to verbally induced PA. Importantly, these results controlled for behavioral placebo ratings, thus potentially reflecting differences in the underlying neural mechanisms over and above the differences in magnitude of behavioural analgesia evoked by the different strategies to induced PA.

WORKSHOP SESSIONS

WORKSHOP IV

Saturday, 13 May | 09:00 – 10:30 | Foyer

Animals and Basic mechanism

Marie Habermann

Interaction Effects of Stimulus Controllability, Predictability and Intensity on Pain Processing

Expectation effects play a crucial role in pain perception. The most precise expectation about an upcoming stimulus can be generated if its intensity can be self-controlled. If stimulus intensities are externally controlled, but still predictable, expectations get more uncertain but remain directed. In case of uncontrollable and unpredictable stimulus intensities, expectations are most variable. By now, predictability and controllability effects on pain perception were confounded in most studies. In a new experimental paradigm we were able to disentangle those effects by employing a design with the following conditions: Painful stimuli were either (1) controllable and predictable, (2) uncontrollable and predictable, or (3) uncontrollable and unpredictable. Healthy participants rated pre-calibrated stimuli applied to their forearm using a visual analogue scale. One sample was tested in the behavioral lab (N = 55) and a second sample in the MR-scanner (N = 60) while recording brain activity. We show in both samples that ratings of uncontrollable and unpredictable heat pain stimuli follow Bayesian magnitude estimation mechanisms and that the ability to control and predict a painful stimulus interacts with pain intensity in subjective pain ratings. In addition, we report neural correlates of the influence of controllability and predictability on pain processing.

Plenary Session VII

Saturday, 13 May
11:00 – 12:00
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PLENARY SESSIONS

PLENARY SESSION VII

Saturday, 13 May | 11:00 – 12:00 | Theater Hall

Placebos beyond the horizon

Yvonne Nestoriuc, Prof.

Helmut Schmidt University Hamburg, Clinical Psychology, Germany

Chair and introduction

Yvonne Nestoriuc has been Professor of Clinical Psychology at the Faculty of Humanities and Social Sciences at Helmut Schmidt University in Hamburg since September 2018. She conducted research on expectancy management as a postdoctoral fellow at Harvard Medical School in Boston and at Philipps-Universität Marburg. From 2013-2016, she was an assistant professor at the Institute of Psychology at the University of Hamburg and from 2016-2018, she was a professor and senior psychologist at the Institute and Polyclinic for Psychosomatic Medicine and Psychotherapy at UKE. Her research interests include placebo and nocebo effects, risks and side effects of psychotherapy, and psychosocial stress in cancer patients.

Website: https://www.uke.de/kliniken-institute/institute/institut-fuer-psychotherapie/referentinnen-und-referenten-psychotherapietag-2019.html

PLENARY SESSIONS

PLENARY SESSION VII

Saturday, 13 May | 11:00 – 12:00 | Theater Hall

Placebos beyond the horizon
Mindsets, "Placebic" Effects, and the Social-Psychological Creation of Reality

Alia Crum, PhD

Stanford School of Humanities and Sciences, USA

Abstract description

Just as placebo effects demonstrate that the effects of any medicine or treatment are determined, in part, as a result of the psychological and social context in which they are experienced, the total effect of anything (e.g., the effects of exercise, diet, our genetics, a broad illness or a global pandemic) can also be influenced by placebo-like or "placebic" effects. This talk will discuss the overarching framework of mindset in driving such effects. I will review current thinking regarding what a mindset is and how mindsets are related to-yet distinct from-other psychological variables such as expectations and personality. Within the talk, I will cover a selection of empirical studies demonstrating how mindsets can influence health outcomes in a range of domains both within and beyond medicine via affective, attentional, behavioral and physiological mechanisms.

Bio

Alia Crum is an Associate Professor for Psychology and Medicine at Stanford School of Humanities and Sciences in the US. Her research focuses on how changes in subjective mindsets - the lenses through which information is perceived, organized, and interpreted - can alter objective reality through behavioral, psychological, and physiological mechanisms. Her work is also inspired by research on the placebo effect, a remarkable and consistent demonstration of the ability of the mindset to elicit healing properties in the body. She is interested in understanding how such mindsets affect importantoutcomes outside the realm of medicine, in the domains of behavioral health and organizational behavior. More specifically, she aims to understand how mindsets can be consciously and deliberately changed through intervention to affect organizational and individual performance, physiological and psychological well-being, and interpersonal effectiveness.

Website: https://psychology.stanford.edu/people/alia-crum

PLENARY SESSIONS

PLENARY SESSION VII

Saturday, 13 May | 11:00 – 12:00 | Theater Hall

Placebos beyond the horizon

Philip Hurst, PhD

Canterbury Christ Church University, UK

Bio

Philip Hurst is a Senior Lecturer in Sport and Exercise Psychology. He teaches in the Sport and Exercise Psychology, Sport and Exercise Science, and Sport Therapy and Rehabilitation programs. His research examines the role of the psyche in the effectiveness of performance-enhancing substances and the psychological antecedents of substance use, as well as looking at placebo effects, safety measures in sport, and doping in sport.

Website: https://www.canterbury.ac.uk/people/philip-hurst

Datablitz Session VII

Saturday, 13 May
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DATABLITZ SESSIONS

DATABLITZ VII

Saturday, 13 May | 12:00 – 12:30 | Theater Hall

Placebos beyond the horizon

Roni Shafir

Virtual reality for pain reduction – simply a distraction?

Virtual Reality (VR) appears to be a promising analgesic tool. This talk will summaries recent findings from our lab, showing the analgesic effects of VR in both healthy participants and patients suffering from orofacial pain (temporomandibular disorder, TMD). Specifically, among healthy participants, we found that VR resulted in better pain tolerance, as well as reduced pain unpleasantness and state anxiety. These findings were replicated with a cohort of TMD patients, where VR improved experientially-induced pain tolerance, as well as pain unpleasantness, mood, and anxiety ratings. Furthermore, when testing the effectiveness of VR in a clinical trial conducted remotely at home, we found improvement in TMD pain outcomes. These findings support the notion that VR is an effective intervention for both acute and chronic pain. Yet, its underlying psychological mechanisms are not well understood. One important question that remains relatively unexplored is whether VR differs from cognitive attentional distraction. To test that, VR must be compared to a positively valanced attentional distraction. I will present new data comparing between the analgesic effects of a VR ocean environment and attentional distraction that involves imagining the same VR ocean contents, with the goal of better understanding whether VR transcends attentional distraction.

DATABLITZ SESSIONS

DATABLITZ VII

Saturday, 13 May | 12:00 – 12:30 | Theater Hall

Placebos beyond the horizon

Jana Kraft

Relationship between hope, confidence, and anxiety and the success of infertility treatment with IVF-Naturelle® - a prospective cohort study

In addition to biological factors, psychological factors such as stress also play a role for the success of infertility treatments. This ongoing study investigates the influence of treatment expectancy and emotional states of women undergoing in vitro fertilization treatment in natural cycle (IVF-Naturelle®) on pregnancy outcome. A prospective cohort study of 100 women (37,0 ± 3,3 years) who undergo IVF-Naturelle® treatment is conducted. Depression, anxiety, stress (DASS), state anxiety (STAI), current state of mood (ASTS), fertility-related quality of life (FertiQoL) and treatment expectations (TEX-Q) are examined at baseline. Emotional states are recorded daily up to 17 days until biochemical pregnancy is evaluated. Biochemical pregnancy was so far documented in 13 of 51 women. Preliminary analyses revealed significantly lower anxiety levels, higher infertility-treatment related QoL, and increased hope, confidence and satisfaction in women who later got pregnant compared to non-responding women. Logistic regressions revealed confidence and anxiety as independent predictors for biochemical pregnancy. Our study yields preliminary evidence that a positive attitude may favor the success of infertility treatment with IVF-Naturelle®. However, this is an ongoing study and complete results will be presented at the conference.

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Saturday, 13 May | 12:00 – 12:30 | Theater Hall

Placebos beyond the horizon

Sigrid Juhl Lunde

Implementing control interventions in studies on music-induced analgesia: Which methodological standards should apply?

There is a growing interest in the pain-relieving effect of music listening, i.e. music-induced analgesia. Yet, this line of research is accompanied by methodological cHallenges that may cause us to overestimate the specific effect of music. For instance, due to lack of blinding or rigorous control interventions, the impact of treatment expectations may be skewed or is unaccounted for. Based on the newly developed CoPPS statement, this presentation will discuss the implementation of control interventions within the framework of music-induced analgesia. This is exemplified by recent experimental work that tested the pain-relieving effect of music against matched, auditory controls to test the contribution of non-specific, contextual factors (e.g., expectations for pain relief) and employed pharmacological manipulations to investigate the involvement of neurotransmitters (i.e., endogenous opioids and dopamine). Importantly, results from the study showed that music-induced analgesia—as well as pain levels in auditory controls—was primarily mediated by the participants' expectations for pain relief rather than opioid and dopamine-dependent mechanisms. These findings underline the importance of determining how expectations influence trial outcomes and encourage the application of new guidelines and methodological standards for control conditions when examining music-induced analgesia.

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DATABLITZ VII

Saturday, 13 May | 12:00 – 12:30 | Theater Hall

Placebos beyond the horizon

Jens Gaab

Deceptive and open-label placebo effects in experimentally induced guilt: a randomized controlled trial in healthy subjects

Placebos are known to yield significant effects in many conditions. We examined deceptive and open-label placebo effects on guilt, which is important for self-regulation and a symptom of mental disorders. Following an experimental induction of guilt, healthy subjects were randomized to deceptive placebo (DP; n = 35), open-label placebo (OLP; n = 35), or no treatment (NT; n = 39). The primary outcome was guilt responses assessed in area under the curve (AUC). Secondary outcomes were shame, guilt, and affect. We hypothesized that DP and OLP would reduce guilt compared to NT. Guilt responses were higher in the NT group than in the placebo groups (estimate = 2.03, 95% CI = 0.24–3.82, d = 0.53), whereas AUC guilt did not differ significantly between the placebo groups (estimate = −0.38, 95% CI = −2.52–1.76, d = −0.09). Placebos are efficacious in reducing acute guilt responses, regardless of the placebo administration (i.e., open vs. deceptive). Furthermore, we observed narrative-specific effects with significant changes of guilt but not shame, pride, or affect. These results indicate not only that guilt is amenable to placebos but also that placebos can be administered in an ethical and potentially emotion-specific manner.