

gated the expression levels of a panel of inflammatory mediators (IL6, IL-1 β , MIF, TNF α) in the ventral hippocampus of the same animals. The most interesting and significant findings are related to IL-1 β and MIF. Indeed, we found that only HFD was associated with higher levels of IL-1 β (+30%), an effect that was more pronounced in animals previously exposed to PNS (+50%). Moreover, both PNS and HFD were associated with lower mRNA levels of MIF (-10%, -15% respectively with PNS and HFD) and this effect was more pronounced in animals exposed both to PNS and HFD (-40%). We are now evaluating the same panel of inflammatory mediators in the dorsal hippocampus and the hypothalamus.

Our studies indicate that HFD induces metabolic alterations and that the association of PNS and HFD may alter inflammatory responses in an additive way.

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P.256 The impact of raw milk consumption on gastrointestinal bowel and skin complaints in immune depressed adults

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Introduction: Despite health concerns with regards to an increased risk for foodborne illnesses associated with consuming unpasteurized dairy products, there is an increasing public demand for 'natural' products, including raw milk. Those who advocate the consumption of raw milk underline its potential positive health effects, such as a reduction in allergy complaints in people who start to consume raw milk. **Aim:** The aim of this study was to investigate the impact of raw milk consumption on gastrointestinal bowel and skin complaints, mood, and perceived health.

Methods: Raw milk consumers were recruited at various US farms. They were invited to complete an online survey on raw milk consumption and their past and current health status. In addition to demographics, subjects were asked if they had a chronic disease and whether or not they perceived a depressed immune status. Usual milk consumption was recorded (frequency and quantity), as well as the year of first time raw milk consumption. Perceived immune functioning and health were scored on scales ranging from 0

(very bad) to 10 (very good). In addition, the immune status questionnaire was completed. Eleven gastrointestinal bowel complaints were scored on a 6-point Likert scale ranging from "all of the time" to "none of the time". In a similar way, 10 skin complaints were rated. Mood was rated with single item 5-point Likert scales ranging from "not at all" to "extremely", and included fatigue, tension-anxiety, depression/dejection, anger/hostility, and active/vigor.

All assessments were done twice: (1) assessing mood, perceived health and immune status before the start of consuming raw milk, (2) assessing their current mood, perceived health and immune status. Subjects who reported a depressed immune status and/or chronic disease were compared to healthy subjects.

Results: Data from N=230 subjects were included in the analysis. Perceived immune functioning and health scores were significantly higher ($p < 0.05$) after starting to consume raw milk. Similarly, after starting to consume raw milk a significant reduction ($p < 0.05$) in the severity of gastrointestinal bowel symptoms (e.g., abdominal pain and diarrhea), and skin problems (e.g., itching) was reported. The observed effects were also seen in healthy subjects, but the differences between before and after starting to consume raw milk were much more pronounced in those who reported depressed immune functioning and/or those reporting to have a chronic disease. Also, the observed effects were significantly ($P < 0.05$) greater in men when compared to women. No effects were found from the farm raw milk origin.

Conclusion: The consumption of any raw milk is associated with significant positive effects on perceived health and immune status. After starting to consume raw milk, subjects reported significantly fewer bowel and skin problems. Although these effects were also seen in healthy adults, the positive health effects seen after raw milk consumption were most pronounced in immune depressed subjects with or without chronic disease. Future research should confirm these findings and further address the safety concerns associated with raw milk consumption.

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P.257 LSD increases social adaptation to opinions similar to one's own

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Introduction: Inferring value from the reactions of others and adapting one's behavior to social group norms is an essential process in every-day decision making [1].

However, social learning has been shown to be altered in psychiatric disorders and the neuropharmacology of social influence processing is mostly unknown. Yet, lysergic acid diethylamide (LSD), a prototypical psychedelic which has high affinity at serotonin (5-HT)-2A/C, -1A/B, -6, and -7, and dopamine D2/D1 receptors, has been shown to alter social perception [2].

Aim: To investigate the role of the 5-HT2A receptor in social influence processing and decision making, and to therefore fill a critical knowledge gap regarding the neuropharmacology of social learning, this study used LSD with and without ketanserin - a selective 5-HT2A receptor antagonist - pretreatment together in combination with behavioral assessments and neuroimaging.

Methods: In a double-blind, randomized, cross-over study 23 healthy participants received 1) placebo+placebo, 2) placebo+LSD (100 µg po), and 3) ketanserin (40 mg po)+LSD in different sessions. Participants completed a task assessing the social influence on aesthetic judgments, allowing the investigation of social feedback processing and subsequent decision making via fMRI and behavioral ratings. Participants rated 60 pictures of street art per drug condition according to their perceived aesthetic qualities on a 0-100 point scale (initial judgment). Participants were then presented with the mean rating of an independent group (group norm) that, unknown to the participants, algorithmically varied as a function of the initial judgment. It either did not deviate, deviated moderately (low conflict condition: within 15-25 points), or deviated highly (high conflict condition: within 55-65 points) from the participant's initial judgment. Participants could then re-evaluate their initial judgment (final judgment). Adaptation to the social norm was quantified by calculating the absolute value of the change between initial and final judgment in relation to the distance between initial judgment and the group norm for each trial.

Results: Participants adapted their opinion more strongly to group norms in the high conflict than the low conflict condition under placebo and ketanserin+LSD. This pattern was reversed by LSD, i.e. participants conformed more to the group norm in the low conflict condition than in the high conflict condition [all $p < 0.05$, Bonferroni corrected; interaction drug x condition: $F(2,44) = 4.83$, $p < 0.05$]. Processing low conflict was associated with increased BOLD signal in the dorsal striatum in the LSD condition while processing high conflict was associated with increased BOLD signal in the supplementary motor area in the placebo condition. No differences in BOLD signal were observed during decision making.

Conclusion: LSD increases adaptation to opinions similar to one's own, presumably via stimulation of 5-HT2A receptors. fMRI results reveal that this is rather attributable to alterations in social feedback processing than to decision making. The data shed light on the role of the 5-HT system in social influence processing and are therefore important for the development of novel treatments in psychiatric disorders compromised by altered social learning abilities.

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P.258 Low-Field Magnetic Stimulation (LFMS) decreases cuprizone-induced cognitive impairment and brain pathology in mice

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Cognitive impairment (CI) and depression are two primary neuropsychiatric symptoms often co-occur in patients with multiple sclerosis (MS). CI and depression are leading causes of disability in MS and affected up to 70% patients with MS. There are currently no approved treatments for CI in MS [1]. Although depression is treatable, it is under-managed due to decreased tolerance to side effects in MS patients. Untreated depression worsens CI, and CI decreases treatment response of depression in MS patients. Thus, efficient, safe and acceptable treatments for CI and depression are highly needed. Repetitive transcranial magnetic stimulation (rTMS) is a non-invasive brain stimulation technology widely used in treating major depression and other neuropsychiatric disorders [2]. rTMS may reduce the spasticity and depressive symptoms in MS, but the effects of rTMS on cognitive function remain conflicting. Low-field magnetic stimulation (LFMS) is a non-invasive magnetic stimulation device that produces diffuse and low-intensity magnetic stimuli to multiple cortical areas. Clinical studies have shown rapid mood-elevating effects of LFMS in patients with depression or bipolar disorder. Animal studies found that gamma-band (gamma-LFMS) improved depressive symptoms and CI [3,4]. However, the effects of LFMS on MS-related cognitive impairment and brain pathology remain unknown. In this study, we examined the therapeutic effects of LFMS on CI, depressive symptoms and MS-related brain pathologies using cuprizone (CPZ) intoxication mouse models of MS [5]. Specifically, we studied the effects of LFMS on CI and depressive symptoms; on demyelination and axonal damage and microglial activation and polarization. We fed mice with food containing 0.2% CPZ to create demyelination and behavioural changes in mice. Cuprizone triggers astrocyte and microglia activations and active inflammatory process, which allows us to study the effects of LFMS on oligodendro-