suggest that UBE3B expression increases developmentally and is decreased in schizophrenic samples, and thereby could contribute to the developmental pathophysiology of schizophrenia by disturbing periadolescent synaptic refinement of prefrontal cortical circuitry.
Methods: Nissl-stained homogenous populations of pyramidal neurons were extracted from layer III of the prefrontal cortex via the Arcturus XT Laser Capture Microdissection protocol from a cohort of pre-adolescent ($n = 7$) and post adolescent ($n = 6$) control subjects. Total mRNA was then isolated and amplified using the Picopure mRNA Isolation Kit from Arcturus. Expression profiling experiments were conducted using the Affymetrix X3P microarray chip. The generated data were normalized with MAS5. Differentially expressed genes in pre- vs post-adolescent subjects were determined using ANOVA, and filtered with an FDR-corrected *P* value of 0.05 and a fold change of 1.5. A pathway analysis was performed with GeneGo software to determine the biological significance of the differentially expressed genes
UBE3B protein expression levels were verified using an immunohistochemistry staining protocol with an anti-ube3b polyclonal antibody made in rabbit and an anti-rabbit secondary made in goat. Tissue was fixed in 4% paraformaldehyde and cut at 20µm(developmental cohort) and 10 µM(disease cohort). Images were taken at 2.5x magnification to visualize staining. 500uM x 500uM columns were drawn to count Ube3B and Ube3b/Nissl co-localization staining through A9 prefrontal cortex layers I-VI.
Fold change microarray data were validated with qRT-PCR in an ongoing investigation of the genes of interest. Templates were generated from the LCM cohort cDNA and amplified using SYBR Green and normalized to GAPDH.
Results: UBE3B cellular density increases developmentally and is also seen to be decreased in adult subjects with schizophrenia (SZ). The percent of total ube3b-exressing cells, specifically pyramidal neurons, is also decreased in SZ. Genetically, we found UBE3B to be upregulated in the healthy post-adolescent cohort, and down-regulated in the adult SZ cohort versus the healthy adult control.
Discussion: We are particularly interested in UBE3B, a gene that was found to be upregulated during periadolescent development but downregulated in subjects with SZ. Because UBE3B is involved in ubiquitination, which has been strongly implicated in the regulation of synaptic plasticity, our findings raise the hypothesis that altered expression of UBE3B could contribute to the developmental pathophysiology of SZ by disturbing periadolescent synaptic refinement of prefrontal cortical circuitry.

T206. The dopaminergic response to acute stress in health and psychopathology: a systematic review

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Background: Previous work in animals has shown that dopamine (DA) in cortex and striatum plays an essential role in stress processing. We reviewed the evidence for the role of DA in the human acute stress response in both healthy individuals and those at increased risk for or diagnosed with a psychiatric disorder.
Methods: PUBMED was searched for studies published before January 8th 2015 using the following Boolean phrase: ("positron emission tomography" OR "PET" OR "single photon emission computed tomography" OR "SPECT" OR "single photon emission tomography" OR "SPET") AND ("dopamine") AND ("stress" OR "pain").
Results: All studies included (n studies = 25, n observations = 324) utilized DA D2/3 positron emission tomography and measured DAergic activity during an acute stress challenge. The evidence in healthy volunteers (HV) suggests that physiological, but not psychological, stress consistently increases striatal DA release. Instead, increased medial prefrontal cortex (mPFC) DAergic activity in HV was observed during psychological stress. Across brain regions, stress-related DAergic activity was correlated with the physiological and psychological intensity of the stressor. The magnitude of stress-induced DA release was dependent on rearing conditions, personality traits and genetic variations in several SNPs. In psychopathology, preliminary evidence was found for stress-related dorsal striatal DAergic hyperactivity in psychosis spectrum and a blunted response in chronic cannabis use and pain-related disorders, but results were inconsistent.
Discussion: Physiological stress-induced DAergic activity in striatum in HV may reflect somatosensory properties of the stressor and readiness for active fight-or-flight behavior. DAergic activity in HV in the ventral striatum and mPFC may be more related to expectations about the stressor and threat evaluation, respectively. Future studies with increased sample size in HV and psychopathology assessing the functional relevance of stress-induced DAergic activity, the association between cortical and subcortical DAergic activity and the direct comparison of different stressors are necessary to conclusively elucidate the role of the DA system in the stress response.

T207. No link between duration of prodromal and psychotic symptoms and brain structural volumes in emerging psychosis

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Background: The time period during which patients manifest psychotic or unspecific symptoms prior to treatment (duration of untreated psychosis, DUP and the duration of untreated illness, DUI) has been found to be moderately associated with poor clinical and social outcome, which may amongst others be due to "neurotoxicity" of untreated psychosis. Equivocal evidence exists of an association between DUP/DUI and structural brain abnormalities, such as reduced hippocampus (HV) (Bühlmann *et al.*, 2010), pituitary volume (PV) (Büschlen *et al.*, 2011) and grey matter volume (GMV) (Borgwardt *et al.*, 2007). The objective of this work was to examine if DUP and DUI are associated with grey matter volume abnormalities in HV, PV or GMV.
Methods: Using a region-of-interest (ROI) based approach, we present data of 39 patients from the Basel FePsy (Früherkennung von Psychosen) (Riecher-Rössler *et al.*, 2007) study for which information about DUP, DUI and HV, PV and GMV data could be obtained. 23 of the patients were identified as first-episode-psychosis patients (FEP), 16 as at-risk-mental-state (ARMS – T) patients, who later made the transition to frank psychosis.
Results: We found no significant association between DUP/DUI and HV, PV or GMV when corrected for sex, age and antipsychotics, though we found a statistical trend for a weak negative association between DUI and GMV in FEP.
Discussion: Our results do not support the hypothesis of a "toxic" effect of untreated psychosis on brain structure.

T208. Increased expression of alpha-2,8-sialyltransferase 8 (ST8SIA2) in superior temporal gyrus of elderly patients with schizophrenia

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Background: The role of posttranslational protein modifications (PTMs) in the pathophysiology of schizophrenia (SCZ) is a recent target of investigation in this devastating neuropsychiatric illness. One PTM, glycosylation, has come under study due to the role glycan adornment plays in modulating a wide variety of inter- and intracellular processes. Carbohydrate active enzymes (CAzymes), glycosyltransferases and glycosidases, comprise approximately 2% of the human genome and mediate this functionally important PTM.
Sialyltransferases (SiaTases) and sialidases respectively attach or cleave the 9-carbon α-keto sugar, N-acetylneuraminic acid (NeuAc or sialic acid) on a substrate molecule. NeuAc is commonly found at the terminus of glycan branches and is uniquely able to form extended homopolysaccharide chains. Polysialic acid (PSA) is synthesized by the addition of 8+ NeuAc units attached via an α-2,8-linkage hydrolyzed by ST8SIA2, ST8SIA4, or less efficiently by ST8SIA3. PSA and polysialylated proteins play important roles in the spatiotemporal