**Supplementary Table S1.** Exclusion Criteria for healthy controls and UHR subjects

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Sites** | **London** | **Basel** | **Melbourne** | **Munich** |
| **Exclusion criteria for healthy controls** |  |  |  |  |
| Past or present diagnosis of schizophrenia spectrum or bipolar disorder, as well as borderline personality disorder, delirium, dementia, amnestic or other cognitive disorders, mental retardation, and psychiatric disorder due to a somatic factor, following DSM-IV criteria | x | x | x | x |
| Previous treatment with antipsychotics | x | x | x | x |
| Medical illness | x | x | x | x |
| Family history of psychiatric illness | x | x | x | x |
| Past or present inflammatory, traumatic, or epileptic diseases of the CNS | x | x | x | x |
| Alcohol or substance abuse or dependence | x | x | x | x |
| Pregnancy | x | x | x | x |
| Age below 18 years |  | x |  |  |
| **Exclusion Criteria for UHR subjects** |  |  |  |  |
| Past o present diagnosis of schizophrenia spectrum or bipolar disorder, as well as borderline personality disorder, delirium, dementia, amnestic or other cognitive disorders, mental retardation, and psychiatric disorder due to a somatic factor, following DSM-IV criteria | x | x | x | x |
| Alcohol or substance abuse or dependence | x | x | x | x |
| Past or present inflammatory,  traumatic, or epileptic diseases of the CNS | x | x | x | x |
| Previous treatment with antipsychotics for > 3 weeks |  | x | x | x |
| Age below 18 years |  | x |  |  |

Abbreviations: UHR, ultra high risk; CNS, central nervous system.

**Supplementary Table S2.** Inclusion Criteria for UHR subjects

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Sites (Clinic)** | **London-(OASIS)-** | **Basel-(FEPSY)-** | **Melbourne-(PACE)** | **Munich-(FETZ)** |
| **Instruments** | CAARMS, PANSS | BSIP, BPRS, SANS | CAARMS, BPRS, SANS | BSABS  PANSS |
| **Inclusion criteria** |  |  |  |  |
| Attenuated psychotic symptoms (APS) \* | x | x | x | x |
| Brief limited intermittent psychotic symptoms (BLIPS) \* | x | x | x | x |
| State + Trait  risk factor \* | 1st degree relatives, Significant reduction in mental state or functioning (reduction in GAF\_30) within the past year. | 1st or 2nd degree relatives, defined number of risk factors, prodromes + marked deterioration  in defined social roles. | 1st degree relatives, Significant reduction in mental state or functioning (reduction in GAF\_30) within the past year. | 1st degree relatives, pre- or perinatal complication  (reduction in GAF\_30) |

\*APS; BLIPS, State + Trait risk factor according to Yung et al. (2005), ([Yung *et al.* 2005](#_ENREF_10)).

Abbreviations: CAARMS, Comprehensive Assessment of ARMS ([Yung *et al.* 2005](#_ENREF_10)); PANSS, Positive and Negative Symptom Scale ([Kay *et al.* 1987](#_ENREF_4)); BPRS, Brief Psychiatric Rating Scale ([Rhoades &Overall 1988](#_ENREF_7)); BSABS, Bonn Scale for Assessment of Prodromal Symptoms ([Gross 1987](#_ENREF_3)); BSIP, Basel Screening Instrument for Psychosis ([Riecher-Rossler *et al.* 2008](#_ENREF_8)); SANS, Scale for the Assessment of Negative Symptoms ([Andreasen 1989](#_ENREF_1)); GAF, Global Assessment of Functioning ([Endicott *et al.* 1976](#_ENREF_2)); OASIS, Outreach And Support In South London clinic; FEPSY, Early detection of psychosis clinic; PACE, Personal Assessment and Crisis Evaluation clinic; FETZ, Early Detection and Intervention Centre for Mental Crisis.

**Supplementary Table S3.** Socio-demographic characteristics of the study samples per site

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Sites** | **Characteristics** | **HC** | **UHR-NT** | **UHR-T** |
| **London**  **Basel**  **Melbourne**  **Munich** | **Number of subjects** | 47  22  39  42 | 44  23  26  24 | 12  12  10  16 |
| **London**  **Basel**  **Melbourne**  **Munich** | **Age (mean, SD)** | 25.51 ± 4.4  23.00 ± 4.3  20.10 ± 2.3  24.48 ± 3.7 | 24.14 ± 4.9  23.26 ± 5.8  20.04 ± 3.0  26.08 ± 6.1 | 23.25 ± 4.1  24.58 ± 5.2  19.20 ± 2.6  23.38 ± 4.5 |
| **London**  **Basel**  **Melbourne**  **Munich** | **Gender (Female/Male)** | 14/33  9/13  14/25  14/28 | 17/27  10/13  11/15  11/13 | 2/10  3/9  4/6  4/12 |
| **London**  **Basel**  **Melbourne**  **Munich** | **Ethnicity**  Caucasian  Black  Asian  Mixed  Caucasian  Black  Asian  Others  Caucasian  Black  Asian  Others  Caucasian  Black  Asian  Others | 28/47  7/47  6/47  6/47  22/22  0  0  0  36/39  0  3/39  0  42/42  0  0  0 | 26/44  5/44  2/44  11/44  23/23  0  0  0  23/26  0  3/26  0  24/24  0  0  0 | 5/12  1/12  0  6/12  12/12  0  0  0  10/10  0  0  0  16/16  0  0  0 |
| **London**  **Basel**  **Melbourne**  **Munich** | **Handedness**  Right  Left  Ambidextrous  Right  Left  Ambidextrous  Right  Left  Ambidextrous  Right  Left  Ambidextrous | 45/47  0  2/47  16/22  5/22  1/22  36/39  2/39  1/39  35/42  5/42  2/42 | 44/44  0  0  22/23  1/23  0  25/26  1/26  0  20/24  2/24  2/24 | 10/12  1/12  1/12  9/12  3/12  0  10/10  0  0  16/16  0  0 |

**Supplementary Table S4.** Image acquisition

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Site** | **Scanner** | **Field**  **Strength** | **TR/TE (ms)** | **Slice**  **Thickness**  **(mm)** | **Voxel**  **dimensions (mm)** | **Sequence** |
| London | GE Signa | 1.5 T | 3000ms/40ms | 1.5mm | 0.86 x 0.86 x 1.5 | 3D-SPGR |
| Basel | Siemens | 1.5 T | 9.7ms/4ms | 1.1mm | 1.28 x 1 x 1 | 3D-SPGR |
| Munich | Siemens | 1.5 T | 11.6ms/4.9ms | 1.5mm | 0.45 x 0.45 x 1.5 | 3D-MPRAGE |
| Melbourne | GE Signa | 1.5 T | 14.3ms/3.3ms | 1.5mm | 0.937 x 0.937 x 1.5 | 3D-SPGR |

Scanners pulse sequences, slice, location.

**Supplementary Table S5.** Clinical Measures London site

|  |  |  |  |
| --- | --- | --- | --- |
|  | **UHR\_NT(n=44)**  **Mean (±SD)** | **UHR\_T(n=12)**  **Mean (±SD)** | **Significance** |
| **CAARMS-Abnormalities**  **of Thought Content** | 3.48±1.38 | 3.50±1.06 | F=0.002; df=1; p=0.964 |
| **CAARMS-Perceptual**  **Abnormalities** | 2.50±1.90 | 2.75±2.31 | F=0.108; df=1; p=0.743 |
| **CAARMS-Speech Abnormalities** | 1.71±1.45 | 3.00±1.69 | F=5.003; df=1; p=0.030 |
| **PANSS\_Negative** | 12±4.46 | 14.63±5.63 | F=2.137; df=1; p=0.150 |
| **PANSS\_Positive** | 10.81±3.9 | 11.25±4.26 | F=0.083; df=1; p=0.775 |
| **PANSS\_General** | 25.48±8.15 | 30.25±11.67 | F=2.046; df=1; p=0.159 |
| **GAF** | 58.12±10.15 | 46.50±10.85 | F=8.616; df=1; p=0.005 |
| **IQ (WAIS)\*** | 99±11.49 | 94±7.47 | F=1.412; df=1; p=0.241 |

\* Information was available for a subset of the whole sample (i.e. UHR-NT=39; UHR-T=8)

Abbreviations: UHR-T, ultra high risk with disease transition; UHR-NT, ultra high risk without disease transition; CAARMS, Comprehensive Assessment of At-Risk Mental State ([Yung *et al.* 2005](#_ENREF_10)); PANSS, Positive and Negative Symptom Scale ([Kay *et al.* 1987](#_ENREF_4)); GAF, Global Assessment of Functioning ([Endicott *et al.* 1976](#_ENREF_2)); WAIS, Wechsler Adult Intelligence Scale ([Wechsler 1997](#_ENREF_9)).

**Supplementary Table S6.** Clinical Measures Basel site

|  |  |  |  |
| --- | --- | --- | --- |
|  | **UHR\_NT(n=23)**  **Mean (±SD)** | **UHR\_T(n=12)**  **Mean (±SD)** | **Significance** |
| **BPRS** | 37.09±6.84 | 40.83±11.45 | F=1.475; df=1; p=0.233 |
| **SANS** | 7.04±4.50 | 9.75±5.81 | F=2.327; df=1; p=0.137 |
| **IQ (LPS)\*** | 111±16.92 | 115±11.57 | F=0.366; df=1; p=0.550 |
| **IQ (MWT)\*\*** | 106±15.76 | 112±11.59 | F=1.320; df=1; p=0.260 |

\* Information was available for a subset of the whole sample (i.e. UHR-NT=19; UHR-T=12)

\*\* Information was available for a subset of the whole sample (i.e. UHR-NT=18; UHR-T=12)

Abbreviations: UHR-T, ultra high risk with disease transition; UHR-NT, ultra high risk without disease transition; BPRS, Brief Psychiatric Rating Scale ([Rhoades &Overall 1988](#_ENREF_7)); SANS, Scale for the Assessment of Negative Symptoms ([Andreasen 1989](#_ENREF_1)); LPS, German scale for assessing non-verbal IQ; MWT, German scale for assessing verbal IQ ([Lehrl *et al.* 1995](#_ENREF_5)).

**Supplementary Table S7.** Clinical Measures Munich site

|  |  |  |  |
| --- | --- | --- | --- |
|  | **UHR\_NT(n=24)**  **Mean (±SD)** | **UHR\_T(n=16)**  **Mean (±SD)** | **Significance** |
| **PANSS\_Negative\*** | 12.05±5.15 | 16.25±8.97 | F=2.379; df=1; p=0.136 |
| **PANSS\_Positive\*** | 9.74±2.28 | 12.88±4.45 | F=5.960; df=1; p=0.022 |
| **PANSS\_General\*** | 28.42±6.34 | 29.25±11.14 | F=0.061; df=1; p=0.209 |
| **IQ (MWT)\*\*** | 111±13.87 | 104±17.22 | F=1.535; df=1; p=0.226 |

\* Information was available for a subset of the whole sample (i.e. UHR-NT=19; UHR-T=8)

\*\* Information was available for a subset of the whole sample (i.e. UHR-NT=18; UHR-T=11)

Abbreviations:UHR-T, ultra high risk with disease transition; UHR-NT, ultra high risk without disease transition; PANSS, Positive and Negative Symptom Scale ([Kay *et al.* 1987](#_ENREF_4)); MWT, German scale for assessing verbal IQ ([Lehrl *et al.* 1995](#_ENREF_5)).

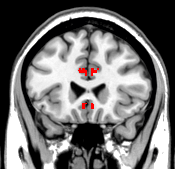
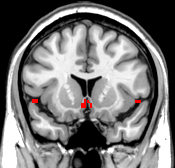
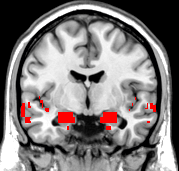
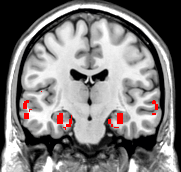
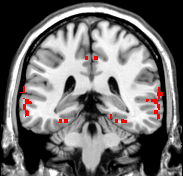
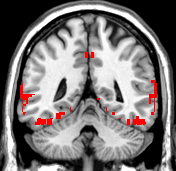
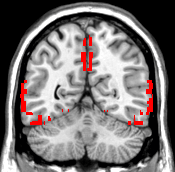
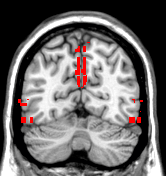
**Supplementary Table S8.** Clinical Measures Melbourne site

|  |  |  |  |
| --- | --- | --- | --- |
|  | **UHR\_NT(n=26)**  **Mean (±SD)** | **UHR\_T(n=10)**  **Mean (±SD)** | **Significance** |
| **CAARMS-Abnormalities**  **of Thought Content** | 1.69±1.15 | 2.80±0.63 | F=8.111; df=1; p=0.007 |
| **CAARMS-Perceptual**  **Abnormalities** | 2.15±1.54 | 2.50±1.78 | F=0.335; df=1; p=0.567 |
| **CAARMS-Speech Abnormalities** | 2.12±1.03 | 2.20±1.31 | F=0.042; df=1; p=0.840 |
| **BPRS** | 25.52±11.86 | 25.33±10.97 | F=0.002; df=1; p=0.967 |
| **SANS** | 31.93±18.32 | 32.78±13.59 | F=0.016; df=1; p=0.899 |
| **Premorbid IQ (NART)\*** | 91±11.17 | 98±10.32 | F=0.175; df=1; p=0.175 |

\* Information was available for a subset of the whole sample (i.e. UHR-NT=17; UHR-T=6)

Abbreviations: UHR-T, ultra high risk with disease transition; UHR-NT, ultra high risk without disease transition; CAARMS, Comprehensive Assessment of At-Risk Mental State ([Yung *et al.* 2005](#_ENREF_10)); BPRS, Brief Psychiatric Rating Scale ([Rhoades &Overall 1988](#_ENREF_7)); SANS, Scale for the Assessment of Negative Symptoms ([Andreasen 1989](#_ENREF_1)); NART, National Adult Reading Test ([Nelson &O'Connell 1978](#_ENREF_6)).

**Supplementary Fig. S1. Mask**



Mask used for the regions of interest analyses. The mask includes the following cortical areas: parahippocampal gyrus, inferior frontal gyrus, anterior cingulate, superior temporal gyrus, inferior parietal gyrus and the precuneus. MNI coordinates (y): -66, -56, -46, -36, -16, -6, 14, 24, 34, 44.

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