Supplementary Material to:

**EPA guidance on the early detection of clinical high risk states of psychoses**

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Contents

[S.1. Procedures and formulae of meta-analyses 2](#_Toc397195508)

[S.2. Sensitivity analyses 3](#_Toc397195509)

[S.3. Supplementary Table 1 4](#_Toc397195510)

[S.4. Supplementary Table 2 24](#_Toc397195511)

[S.5. Supplementary Table 3 29](#_Toc397195512)

[S.6. Supplementary Table 4 30](#_Toc397195513)

[S.7. Supplementary Table 5 31](#_Toc397195514)

[S.8. References of Supplementary Material 32](#_Toc397195515)

# S.1. Procedures and formulae of meta-analyses

Although proportions are strictly speaking no measure of effect, they are commonly used in meta-analyses of univariate studies when the assessment of measure of interest is comparable across studies [1]. As this can be assumed in early detection studies in that first-episode psychosis is generally diagnosed according to DSM-IV, we used the proportions of conversions at follow-up (*Ei* = $\frac{ki}{ni}$ with *ki* = number of patients having developed psychosis at follow-up *tx*, and *ni* = (sub)sample size at baseline) and their variance (*Vi* = $\frac{ki}{ni}$ (1 – $\frac{ki}{ni}$ ) / *ni*) as effect estimates in a fixed-effects model [1]. The inverse variance was used as weight *i* to account for the different sample size of studies [1]. Pooled effects and their variance were calculated as $\overline{E}$ = $\frac{\sum\_{i=1}^{k}ωi×Ei}{\sum\_{i=1}^{k}ωi}$ and $\overline{V}$ = $\frac{\sum\_{i=1}^{k}ωi}{(\sum\_{i=1}^{k}ωi)²}$; 95% confidence intervals (CIs) of single and pooled effects were calculated as *Ei* ± (0.98×*Vi*). Pooled sample effects were tested by the *z*-statistic with *z* = $\frac{\overbar{E}}{\sqrt{\overbar{V}}}$ and were assumed significant at  = 5% when *z* > 1.96 and at  = 1% when *z* > 2.58 [1].

Heterogeneity between *Ei*s included in $\overline{E}$ were tested by the *Q*-statistic, a type of 2-statistic with *df* = *l* – 1 and *l* = number of *Ei*s [1]. The formula used was *Q* = $\sum\_{i=1}^{l}\frac{(Ei- \overbar{E})²}{Vi}$. Additionally, *I*2 (= $\frac{Q-df}{Q}×100\%$) was calculated as an estimate of the relative size of heterogeneity [1]. In line with Higgins et al. [2], *I*2 values of 25%, 50% and 75% were regarded as signifying low, moderate and high heterogeneity; and negative values of *I*2 were put at zero.

Whenever significant heterogeneity was detected indicating that considerable variance might have been introduced by sources other than the sampling error considered in the fixed-effects model, a random-effects model was applied [1]. Thereby, the additional test variance 2 was calculated as 2 = $\frac{Q-df}{\sum\_{i=1}^{l}ωi-(\sum\_{i=1}^{l}ωi² / \sum\_{i=1}^{l}ωi)}$ and added to *Vi* to calculate the variance of *Ei* (*Vi\**); if 2 takes on a negative value, this is usually interpreted as meaning that the random-effects variance is inconsequential (i.e., equal to zero) and the random-effects model collapses to a fixed-effects model meta-analysis [3]. The inverse value of *Vi\** provided the weight *i\**. Using *Vi\** and *i\** in the same formulae as in the fixed-effect model, $\overline{E^{\*}}$, $\overline{V^{\*}}$ as well as the related 95% CIs and *z*-values were computed.

# S.2. Sensitivity analyses

To estimate the influence of assessment scales and, relatedly, definitions of UHR criteria (SIPS, CAARMS early versions, CAARMS 2006 version), type of ARMS criteria and combinations (APS, BLIPS, GRFD, COPER, COGDIS, UHR plus COGDIS, UHR and/or COGDIS), and age characteristic of the sample (CAD, YOUTH or ADULT), the above analyses (see S.1.) were performed with these subgroups in addition.

The resulting pooled effect sizes that are essentially proportions were converted into percentages of conversion rates ($\overline{E}$ / $\overline{E^{\*}}$ × 100%) and compared for significant differences using exploratory one-dimensional 2-tests (with *df* = number of effect sizes – 1) unadjusted for multiple testing.

# S.3. Supplementary Table 1

STable 1 List and description of studies included in the meta-analysis (main text reference number in blue) and the guidance authors’ rating of the grade of evidence (GE)

| **Study,** **GE** | **Setting & response/ participation rate** | **Sample characteristics****(size, age, gender, co-morbidities)** | **Assessment and baseline distribution of CHR criteria**  | **Follow-up & missing observations (cumulative)** | **Annual conversion rate**  | **Conversion assessment & diagnoses** |
| --- | --- | --- | --- | --- | --- | --- |
| **Australia** |
| **[77]**Nelson et al. 2013 [4]PACE 400 study**GE:**  **2+** | Specialized early detection service: Personal Assessment and Crisis Evaluation (PACE) clinicMixed: includes 3 intervention and 4 observational studies conducted between 1993 and 2006.% response: 74.8% of eligible sample (n=416) | N=311 Age: 14-30 yrs.(Mdn=18 yrs.)Assigned age group: YOUTH% male: 48.1%Co-morbidities: Not reported  | BPRS (n=407-409) andCAARMS (before 2006 version; n=389-397)Of eligible sample:APS: n=316 (79.4%)BLIPS: n=56 (14.1%)GRFD: n=115 (28.9%) | ≤14.9 yrs. (min. 2.4 yrs.; 7.5±3.2 yrs.)Missing observations:2-4 yrs.: n=0 (0%)4-6 yrs.: n=52 (16.7%)6-8 yrs.: n=135 (43.4%)8-10 yrs.: n=179 (57.5%)10-12 yrs.: n=214 (68.8%)12-15 yrs: n=285 (91.6%) | Overall: n=114 (36.7%)1 yr.: n=65 (20.9%)2 yrs.: n=79 (25.4%)3 yrs.: n=94 (30.2%)4 yrs.: n=102 (32.8%)Estimated conversion rates (Kaplan-Meier)1 yr.: 16.5% (12.7-20.1)2 yrs.: 20.4% (16.3-24.4)3 yrs.: 24.9% (20.4-29.2)4 yrs.: 27.6% (22.8-32.1)5 yrs.: 30.1% (25.0-34.8)10-15 yrs.: 34.9% (28.7-40.6) | Conversion according to BPRS/CAARMS or state public mental health records *Note*: Converters might not have sought help after conversion and, consequently, might not show in state public mental health recordsDiagnoses: Not reported |
| **[78]**Nelson et al.2011 [5]Partly includes PACE 400 sample**GE: 2+** | Specialized early detection service: PACE clinicMixed: also includes participants of intervention studies (n=208) but predominately observational study on patients presented between 01/2000 and 11/2008% response: 88.0% of eligible sample (n=928) | N=817Age: 14-29 yrs. (Mdn: 18 yrs.)Assigned age group: YOUTH% male: 40.8%Co-morbidities: Not reported | CAARMS (before 2006 version)APS: n=664 (81.3%)BLIPS: n=36 (4.4%)GRFD: n=209 (25.6%)APS+GRFD: n=92 (11.3%) | 6 mths. Missing observations:for conversion: 0%CAARMS follow-up assessment: n=307 (37.6%) | Overall: n=72 (8.8%)APS: n=62 (9.3%)BLIPS: n=5 (13.9%)GRFD: n=13 (6.2%)APS+GRFD: n=8 (8.7%) | Conversion according to CAARMS or state public mental health records *Note*: Converters might not have sought help after conversion and, consequently, might not show in state public mental health recordsSchizophrenia spectrum disorder: 23%Psychotic Disorder NOS: 53%**All non-affective psychosis: 76%**Mood disorder with psychotic features: 14%**All affective psychosis: 14%** |
| **Study,** **GE** | **Setting & response/ participation rate** | **Sample characteristics****(size, age, gender, co-morbidities)** | **Assessment and baseline distribution of CHR criteria**  | **Follow-up & missing observations per follow-up (cumulative)** | **Annual conversion rate**  | **Conversion assessment & diagnoses** |
| **[79]**Nelson et al.2012 [6]**GE: 2+** | Specialized early detection service: PACE clinicObservational study of patients presenting between 05/2008 and 07/2010, includes some of [15]% response: Not reported | N=49Age: 19.2±2.9 yrs. (15-25 yrs.)Assigned age group: MIX% male: 44.9%Co-morbidities: 57.1% with mood disorder, 16.3% with anxiety disorder, 8.2% with other axis-I disorder; 14.3% schizotypal personality disorder | CAARMS 2006 versionAPS: n=37 (75.5%)BLIPS: n=1 (2.0%)GRFD: n=4 (8.2%)APS+GRFD: n=7 (14.3%) | 569±345 days (Mdn: 676 days) Missing observations:for conversion: 0% CAARMS follow-up assessment: n=8 (16.3%) | Overall: n=13 (26.5%)Cumulative conversion rate in % ±SE (Kaplan-Meier)6 mths.: 22.8±4.0 1 yr.: 24.9±3.62 yrs.: 27.6±3.7 | Conversion according to CAARMS or state public mental health records *Note*: Converters might not have sought help after conversion and, consequently, might not show in state public mental health recordsSchizophrenia spectrum disorder: 61.5% Other psychotic diagnosis (incl. affective psychosis and psychosis NOS): 38.5% |
| **[80,81]**Yung et al. 2006, 2008 [7,8] **GE: 2+** | No specialized early detection service: ORYGEN Youth HealthObservational study including some PACE 400 participants of 04-10/2003 (n≤76)% response: 76.6% of eligible sample (n=381) | N=292Age: mean: 18.1 yrs. (15-24 yrs.)Assigned age group: YOUTH% male: 48.9%Co-morbidities: Only reported for Youthscope subsample (n=149): 23.4% any axis-I disorder; 46.3% mood disorders, 42.3% anxiety disorders, 22.1% substance use disorders, 7.4% eating disorders | CAARMS (before 2006 version)UHR: n=119 (40.7%)APS: n=111 (38.0%)BLIPS: 0%GRFD: n=13 (4.5%)none: n=173 (59.2%) | 2 yrs.Missing observations:for conversion: 0% CAARMS 6-mths. assessment: n=97 (33.2%)CAARMS 2-yrs. assessment: n=99 (33.9%) | UHR:6 mths.: n=12 (10.1%)2 yrs.: n=19 (15.9%)none:6 mths.: n=1 (0.6%)2 yrs.: n=2 (1.2%) | Conversion according to CAARMS or state public mental health records *Note*: Converters might not have sought help after conversion and, consequently, might not show in state public mental health recordsDiagnoses: Not reported |

| **Study,** **GE** | **Setting & response/ participation rate** | **Sample characteristics****(size, age, gender, co-morbidities)** | **Assessment and baseline distribution of CHR criteria**  | **Follow-up & missing observations per follow-up (cumulative)** | **Annual conversion rate**  | **Conversion assessment & diagnoses** |
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| **[82]**Bechdolf et al. 2010 [9] **GE: 2+** | Specialized early detection service: PACE clinicObservational study of PACE patients presenting in 2007, includes some of [13]% response: Not reported | N=92Age: 18.0±3.0 yrs. (15-24 yrs.)Assigned age group: YOUTH% male: 34.8%Co-morbidities: 56.5% depression, 8.7% anxiety disorder, 8.7% dysthymia or cyclothymia, 15.2% PTSD, 3,3% adjustment disorder | CAARMS 2006 versionAPS: n=74 (80.4%)BLIPS: n=5 (5.4%)GRFD: n=28 (30.4%) | ≤26 mths. (min. 14 mths., 682±283 days)Missing observations:Not reported | Overall: n=20 (21.7%) | Conversion according to CAARMS Schizophrenia: 30%Delusional disorder: 5%Unspecified acute psychotic disorder: 50%**All non-affective psychosis: 85%**Depression with psychotic features: 15%**All affective psychosis: 15%** |
| **[67]**Mason et al. 2004 [10]**GE: 2+** | Specialized early detection service: Psychological Assistance Service (PAS) of Hunter Mental Health in New South Wales, AustraliaObservational study% response: 56.9% of eligible sample (n=130) | N=74Age: 17.3±2.8 yrs. (13-28 yrs.)Assigned age group: YOUTH% male: 52.7%Co-morbidities: Not reported | CAARMS (before 2006 version)APS: n=43 (58.1%)BLIPS: n=23 (31.1%)GRFD: n=19 (25.7%) | ≥1 yr. (26.3±9.2 mths.)Missing observations:Not reported | Overall: n=37 (50.0%)APS: n= 22 (51.2%)BLIPS: n=14 (60.8%)GRFD: n=2 (10.5%) | Conversion according to DSM-IV and/or CAARMSSchizophrenia: 18.9%Schizoaffective disorder: 27%Depression with psychotic features: 18.9%Mania with psychotic features: 5.4%Bipolar disorder with psychotic features: 5.4%Unspecified psychotic episode according to CAARMS: 24.3% |

| **Study,** **GE** | **Setting & response/ participation rate** | **Sample characteristics****(size, age, gender, co-morbidities)** | **Assessment and baseline distribution of CHR criteria**  | **Follow-up & missing observations per follow-up (cumulative)** | **Annual conversion rate**  | **Conversion assessment & diagnoses** |
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| **[83]**Welsh & Tiffin 2013 [11]**GE: 2+** | Specialized early detection service: Follow-up of At-Risk Mental State for Psychosis – FARMS ClinicObservational study% response: Not reported | N=30Age: 15.8±1.4 yrs. (12-18 yrs.)Assigned age group: CAD% male: 47%Co-morbidities: 43% depressive disorders, 20% anxiety disorder, 17% pervasive developmental disorder, 7% behavioural disorders, 7% other disorders | CAARMS 2006 versionAPS: n=30 (100%)GRFD: n=4 (13.3%) | 2 yrs. Missing observations:6 mths.: n=1 (3%) 1 yr.: n=4 (13%) 2 yrs.: n=2 (6.7%) CAARMS 1- and 2-yrs. assessments: majority | 6 mths: n=1 (3.4%)1 yr.: n=1 (3.4%)2 yrs.: n=2 (7.1%) | Conversion according to CAARMS and/or medical records*Note*: Converters might not have sought help after conversion and, consequently, might not show in state public mental health recordsSchizophrenia: 50%Other psychotic disorder: 50%**All non-affective psychosis: 100%** |
| **North America** |
| **[70]**Cannon et al. 2008 [12] ; Addington et al., 2007 [13] North American Prodrome Longitudinal Study (NAPLS 1)**GE: 2+** | Mixed, centres with and without specialized early detection services included.Pooled sample from initially independent 7 observational and intervention studies with ≥1 follow-up% response: 78.6% of eligible sample (n=370) | N=291Age: 18.1±4.6 yrs. (12-30 yrs.)Assigned age group: YOUTH% male: 58.4% Co-morbidities of eligible sample (n=370): 34.9% with mood disorder, 30.4% with anxiety disorder, 15.3% with alcohol abuse or dependence, 19.5% with drug abuse/dependence | SIPS 3.0APS: n=282 (96.9%)BLIPS: n=7 (2.4%)GRFD: n=2 (0.7%) | ≤2.5 yrs. (non-converters: 575±258 days)Missing observations:Not reported  | Overall: n=82 (28.2%)APS: n=79 (28.0%)BLIPS: n=3 (42.9%)GRFD: 0%Cumulative conversion rate in % ±SE (Kaplan-Meier)6 mths.: 12.7±1.9 1 yr.: 21.7±2.52 yrs.: 32.6±3.32.5 yrs.: 35.3±3.71 yr.: n=63 (21.7%)2 yrs.: n=95 (32.6%)2.5 yrs.: n=103 (35.3%) | Conversion according to SIPSDiagnoses: Not reported |

| **Study,** **GE** | **Setting & response/ participation rate** | **Sample characteristics****(size, age, gender, co-morbidities)** | **Assessment and baseline distribution of CHR criteria**  | **Follow-up & missing observations per follow-up (cumulative)** | **Annual conversion rate**  | **Conversion assessment & diagnoses** |
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| **[71]**Schlosser et al. 2012 [14]**GE: 2+** | Specialized early detection service: Staglin Music Festival Centre for the Assessment and Prevention of Prodromal States (CAPP)Observational study% response: Not reported | N=125Of n=84 with ≥1 follow-up:Age: 16.9±3.5 yrs.Assigned age group: YOUTH% male: 62%Co-morbidities: 47.6% with anxiety disorder, 44% with mood disorder | SIPS 3.0Of n=84 with ≥1 follow-up:APS: n=65 (78.4%)BLIPS: n=17 (20.2%)GRFD: n=2 (2.4%) | <2 yrs.Missing observations:overall: n=41 (32.8%) no follow-up assessment | Overall: n=27 (21.6%)Of n=84 with ≥1 follow-up:APS: n=17 (26.2%)BLIPS: n=10 (58.8%)GRFD: n=0 (0%) | Conversion according to SIPS Diagnoses: Not reported |
| **[72]**Carrión et al. 2013 [15]**GE: 2+** | Specialized early detection service: Recognition and Prevention (RAP) program, Glen Oaks, NYObservational study, some participants included in NAPLS 1% response: Not reported | N=101Of n=92 with ≥1 follow-up:Age: 15.9±2.2 yrs. (12-22 yrs.)Assigned age group: CAD% male: 63.0%Co-morbidities: 63% mood disorders, 57.6% anxiety disorders, 9.8% substance-use disorders | SIPS 3.0Of n=92 with ≥1 follow-up:APS: n=92 (100%); BLIPS as exclusion criterion | Mean: 3.0±1.6 yrs. (Mdn=2.8 yrs.)Missing observations:Overall: n=9 (9%) no follow-up assessment  | Overall: n=15 (14.9%) | Conversion according to SIPS Diagnoses: Not reported |
| **[73]**Woodberry et al. 2010 [16]**GE: 2+** | Specialized early detection service: Portland Identification and Early Referral (PIER) programObservational study% response: 81.1% of eligible sample (n=90) | N=73Age: 16.5±2.5 yrs. (12-25 yrs.)Assigned age group: YOUTH% male: 53%Co-morbidities: Not reported | SIPS APS: n=65 (89%)BLIPS: n=5 (7%)GRFD: n=3 (4%)BLIPS excluded from analyses, because included in conversion criteria | ≤2 yrs.Missing observations:2 yrs.: n=16 (21.9%); only mean follow-up of 7 mths. | APS and GRFD only (n=68):n=13 (19.1%) | Conversion defined as development of any positive item rated 6 on the SIPS Diagnoses: Not reported |
| **Study,** **GE** | **Setting & response/ participation rate** | **Sample characteristics****(size, age, gender, co-morbidities)** | **Assessment and baseline distribution of CHR criteria**  | **Follow-up & missing observations per follow-up (cumulative)** | **Annual conversion rate**  | **Conversion assessment & diagnoses** |
| **[74]**Addington et al. 2011 [17]**GE: 2+** | Specialized early detection service: PRIME Clinic at the Centre for Addiction and Mental Health, TorontoIntervention study: CBT vs. supportive therapy % response: 50.0% of eligible sample (n=112) consented to the study (n=56), 5 dropped out before randomization | N=24 of supportive therapy conditionAge: 21.1±3.74 yrs. (14-30 yrs.)Assigned age group: ADULT% male: 35.3%Co-morbidities of all randomized participants (n=51): 25.5% mood disorders, 17.7% anxiety disorders, 5.9% alcohol abuse, 9.8% cannabis abuse | SIPS 3.0APS: n=24 (100%)BLIPS: 0%GRFD: 0% | 1.5 yrs. Missing observations:6 mths.: n=8 (33.3%)1 yr.: n=9 (37.5%)1.5 yrs.: n=11 (45.8%) | Overall: n=3 (12.5%)6 mths.: n=3 (12.5%)1yr.: n=3 (12.5%)2 yrs.: n=3 (12.5%) | Conversion according to SIPS Schizophrenia: 100%**All non-affective psychosis: 100%** |
| **[75]**Buchy et al. 2014 [18]Enhancing the Prospective Prediction Psychosis (PREDICT) study**GE: 2+** | Specialized early detection services: PRIME clinics of the Universities of Toronto, North Carolina and YaleObservational study% response: Not reported | N=170Age: 19.7±4.5 yrs. (12-31 yrs.)Assigned age group: MIX% male: 56.5%Co-morbidities: Not reported | SIPS 5.0APS: n=167 (98.2%)BLIPS: 0%GRFD: n=6 (3.5%) | ≤4 yrs.Missing observations:Not reported | Overall: n=29 (17.1%) | Conversion according to SIPS Diagnoses: Not reported |

| **Study,** **GE** | **Setting & response/ participation rate** | **Sample characteristics****(size, age, gender, co-morbidities)** | **Assessment and baseline distribution of CHR criteria**  | **Follow-up & missing observations per follow-up (cumulative)** | **Annual conversion rate**  | **Conversion assessment & diagnoses** |
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| **[76]**Kayser et al. 2013 [19]**GE: 2+** | Specialized early detection service: Centre of Prevention and Evaluation (COPE), New York State Psychiatric Institute, Columbia UniversityObservational study% response: Not reported | N=24Of n=21 analysed:Age: 21.4±3.8 yrs. (13-27 yrs.)Assigned age group: ADULT% male: 48.1%Co-morbidities: Not reported | SIPS 3.0APS: n=21 (100%)BLIPS: 0%GRFD: 0%  | ≤4 yrs.Missing observations:Overall: n=3 (12.5%)  | 4 yrs.: n=3 (12.5%) | Conversion according to SIPSDiagnoses: “typically schizophrenia”All conversions in patients of age ≥16 years |
| **Germany** |
| **[84,85]**Klosterkötter et al. 2001 [20]; Schultze-Lutter et al. 2006 [21]Cologne Early Recognition (CER) study on that COPER and COGDIS were developed**GE: 2+** | No specialized early detection service.Outpatient departments of German psychiatric university departmentsObservational study% response: 42% of eligible sample (n=385) | N=160Age: 29.3±10.0 yrs. (15-53 yrs.)Assigned age group: ADULT% male: 52.5%Co-morbidities: 36.2% personality disorders, 29.4% affective disorders, 17.5% somatoform disorders, 16.9% anxiety disorders | BSABSIntake criteria: clinical suspicion of beginning psychosis and assessment for basic symptoms, no past or present psychosisCOPER: n=106 (66.3%)COGDIS: n=67 (41.88%)none: n=54 (33.8%) | 9.6±7.6 yrs.(5-37 yrs.)Missing observations:>4 years: 0% | Of those with the criterion:COPER 1 yr.: n=21 (19.8%)2 yrs.: n=39 (36.8%)3 yrs.: n=53 (50.0%)>3 yrs.: n=69 (65.1%)COGDIS 1 yr.: n=16 (23.9%)2 yrs.: n=31 (46.3%)3 yrs.: n=41 (61.2%)>3 yrs.: n=53 (79.1%) | Conversion to schizophrenia according to DSM-IV Schizophrenia: 100%**All non-affective psychosis: 100%** |

| **Study,** **GE** | **Setting & response/ participation rate** | **Sample characteristics****(size, age, gender, co-morbidities)** | **Assessment and baseline distribution of CHR criteria**  | **Follow-up & missing observations per follow-up (cumulative)** | **Annual conversion rate**  | **Conversion assessment & diagnoses** |
| --- | --- | --- | --- | --- | --- | --- |
| **[86]**Schultze-Lutter et al. 2014 [22]**GE: 2+** | Specialized early detection service: FETZ CologneObservational study% response: 51% of initial sample of n=482 | N=246Age: 24.9±6.0 yrs. (15-39 yrs.);18% minors (7.3%) Assigned age group: ADULT male: 63.0%Co-morbidities: 64.6% any axis-I disorder incl. 30.9% depressive disorders | SPI-A andSIPS 3.0COGDIS: n=157 (63.8%) APS: n=157 (63.8%)BIPS: n=22 (8.9%)GRFD: n=0 (0%)none: n=52 (21.1%) | ≤4 yrs. (min. 1 yr.)Missing observations:1 yr.: 0%2 yrs.: n=11 (4.5%)3 yrs.: n=31 (12.6%)4 yrs.: n=57 (23.2%) | 4 yrs. total sample: n=81 (32.9%) 4 yrs. CHR sample: n=75 (38.7%)Annual hazard rates:1 yr. only COGDIS: 0.111 yr. only UHR: 0.281 yr. UHR+COGDIS: 0.362 yrs. only COGDIS: 0.142 yrs. only UHR: 0.282 yrs. UHR+COGDIS: 0.533 yrs. only COGDIS: 0.233 yrs. only UHR: 0.283 yrs. UHR+COGDIS: 0.614 yrs. only COGDIS: 0.234 yrs. only UHR: 0.284 yrs. UHR+COGDIS: 0.66 | Conversion according to DSM-IV using SCID-I Schizophrenia: 75.3% Schizophreniform disorder: 3.7%Schizoaffective disorder: 1.2%Delusional disorder: 6.2%Substance-induced psychosis: 4.9%**All non-affective psychosis: 91.4%**Depression with psychotic features: 3.7%Bipolar disorder with psychotic features: 4.9%**All affective psychosis: 8.6%** |
| **[87]**Bechdolf et al. 2012 [23]German Research Network on Schizophrenia study; project 1.1.2**GE: 2+** | Mixed, centres with and without specialized early detection services included. Intervention study: integrated psychological intervention vs. supportive counselling% response: 76% of eligible sample (128 of 168) | N=65 of supportive counselling conditionAge: 26.8±6.2yrs (18-40 yrs.)Assigned age group: ADULT% male: 64.6%Co-morbidities: Not reported | ERIraos COPER: n=64 (98.5%)GRFD: n=21 (32.3%)Note: APS and BLIPS were exclusion criteria at baseline, and, at follow-up, additional conversion criteria | 2 yrs.Missing observations:1 yr.: n=8 (12.3%)2 yrs.: n=16 (24.6%) | 1 yr.: n=9 (13.8%)2 yrs.: n=10 (15.4%)Additional conversion to an BLIPS/APS defined CHR state:1 yr.: n=2 (3.1%)2 yrs.: n=3 (4.6%) | Conversion assessed with PANSS: any positive psychotic symptom in psychotic intensity for >7daysSchizophrenia/Schizophreniform disorder: 80%Psychosis: 20%**All non-affective psychosis: 100%** |

| **Study,** **GE** | **Setting & response/ participation rate** | **Sample characteristics****(size, age, gender, co-morbidities)** | **Assessment and baseline distribution of CHR criteria**  | **Follow-up & missing observations per follow-up (cumulative)** | **Annual conversion rate**  | **Conversion assessment & diagnoses** |
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| **[88]**Koutsouleris et al. 2009 [24]**GE: 2+** | Specialized early detection service: Early Detection and Intervention Centre for Mental Crises, Ludwig-Maximilians-UniversityObservational study% response: Not reported | N=45Age: 25.1±5.8 yrs. (minimum age: 18 yrs.) Assigned age group: ADULT% male: 62.2%Co-morbidities: Not reported | BSABS andCAARMS (before 2006 version)COPER and/or GRFD: n=20 (44.4%)APS and/or BLIPS: n=25 (55.6%)COPER: n=41 (91.1%)APS: n=20 (44.4%)BLIPS: n=17 (37.8%) | 4 yrs. Missing observations:4 yrs.: n=12 (26.7%) | 4 yrs.: n=14 (31.1%)*Note*: annual and single criteria rates below include n=1 conversion to ICD-10 schizotypal disorder and were therefore not considered in respective moderator analyses 1 yr.: n=13(2.8%)2 yrs.: n=14 (31.1%)3 yrs.: n=15 (33.3%)COPER: n=13 (31.7%)APS: n=12 (60.0%)BLIPS: n=8 (47.1%)  | Conversion according to ICD-10Schizophrenia: 71.4%Schizoaffective disorder: 28.6%**All non-affective psychosis: 100%** |
| **[89]**Schultze-Lutter et al. 2007 [25]**GE: 2+** | Specialized early detection service: FETZ CologneObservational study% response: Not reported | N=146Age: 24.4±5.2 yrs. (16-39 yrs.)Assigned age group: ADULT% male: 69.2%Co-morbidities: Not reported | SPI-A COPER: n=146 (100%) | 2 yrs.Missing observations:6 mths.: n=16 (11%)1 yr.: n=24 (16.4%)2 yrs.: n=38 (26.0%) | 2 yrs.: n=48 (32.9%)6 mths.: n=23 (15.8%)1 yr.: n=36 (24.7%)Of additional n=3, conversion after 2 yrs. became known: (overall:n=51 (34.9%)) | Conversion assessed with PANSS: any positive psychotic symptom in psychotic intensity for >7daysSchizophrenia: 82.4%Schizophreniform disorder: 7.8%Schizoaffective disorder: 3.9%Delusional disorder: 3.9%**All non-affective psychosis: 98%**Depression with psychotic features: 2%**All affective psychosis: 2%** |

| **Study,** **GE** | **Setting & response/ participation rate** | **Sample characteristics****(size, age, gender, co-morbidities)** | **Assessment and baseline distribution of CHR criteria**  | **Follow-up & missing observations per follow-up (cumulative)** | **Annual conversion rate**  | **Conversion assessment & diagnoses** |
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| **[90,91]**Bodatsch, Ruhrmann et al. 2011 [26]; Ruhrmann et al. 2007 [27] German Research Network on Schizophrenia study; project 1.1.3**GE: 2+** | Mixed, centres with and without specialized early detection services included. Observation of the control group of an intervention study% response in 2007 [27]: 32.5% (n=124 in both intervention groups) of eligible sample (n=382) | N=62Age: 24.8±6.0 yrs. (18-40 yrs.)Assigned age group: ADULT% male: 66.1%Co-morbidities: Not reported | ERIraos APS and/or BLIPS: 100% | 2 yrs.Missing observations:only cases included in analyses with conversion within or follow-up until 2 yrs.  | 2 yrs.: n=25 (40.3%) | Assessment: SCID-I psychosis sectionSchizophrenia: 92%Schizophreniform disorder: 4%Delusional disorder: 4%**All non-affective psychosis: 100%** |
| **United Kingdom** |
| **[94]**Fusar-Poli et al. 2013 [28]**GE: 2+** | Specialized early detection service: Outreach and support in SOUTH London (OASIS)Observational study% response: Not reported | N=290Age: 22.9±4.61 yrs. (14-35 yrs.)Assigned age group: ADULT% male: 56.1%Co-morbidities: 14% anxiety disorders, 29% depressive disorders, 8% personality disorders, 13% substance use disorders, 3% OCD, 5% other disorders | CAARMS 2006 and SPI-A APS: n=258 (89%)BIPS: n=52 (18%)GRFD: n=41 (14%)COGDIS (since 2008): not reported | ≤10 yrs.Missing observations:Not reported | 4 yrs.: n=44 (15.2%)Mean time to conversion:375 days (95% CIs 280; 470 days), last observed conversion at 1242 days (~3.5 yrs) | Conversion: Positive symptom according to CAARMS for >1 day Diagnoses: Not reported |

| **Study,** **GE** | **Setting & response/ participation rate** | **Sample characteristics****(size, age, gender, co-morbidities)** | **Assessment and baseline distribution of CHR criteria**  | **Follow-up & missing observations per follow-up (cumulative)** | **Annual conversion rate**  | **Conversion assessment & diagnoses** |
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| **[95,96]**Morrison et al. 2004, 2007 [29,30] Early Detection and Intervention Evaluation (EDIE I) trial**GE: 2+** | No specialized early detection service, referrals by a variety of clinical institutions Intervention study: CT vs. treatment-as-usual (TAU)% response: 95.2% of eligible sample (n=63) was randomized (n=60) | N=23 of TAU conditionAge: 21.5±5.2 yrs. (16-36 yrs.) Assigned age group: MIX% male: 82.6%Co-morbidities: Not reported | PANSS In total sample (n=60) APS: n=48 (80%)BLIPS: n=6 (10%)GRFD: n=4 (6.7%) | 1-3 yrs. Missing observations:1 yr.: n=7 (30.4%)3 yrs.: n=13 (56.5%) | 1 yr.: n=6 (26.1%)3 yrs.: n=7 (30.4%) | Conversion according to DSM-IV Schizophrenia: 71.4%Schizoaffective disorder: 14.3%Other psychotic DSM-IV disorder: 14.3%**All non-affective psychosis: 100%** |
| **[97,98]**Morrison et al. 2011, 2012 [31,32] Early Detection and Intervention Evaluation (EDIE-2) trial**GE: 2+** | Mixed, centres with and without specialized early detection services included.Intervention study: CT vs. monitoring% response: 100% of eligible sample of n=288 | N=144 of monitoring conditionAge: 20.8±4.5 yrs. (14-35 yrs.) Assigned age group: MIX% male: 63.2%Co-morbidities of total sample (n=288): 67% ≥1 DSM-IV diagnosis: 41.3% depressive disorders, 19.9% panic disorders with / without agoraphobia, 11.2% social phobia, 10.9% specific phobia, 8.6% generalized anxiety disorder, 7.5% OCD, 2.2% PTSD | CAARMS (before 2006 version)Only distribution of total sample (n=288) APS: n=266 (92.4%) BLIPS: n=7 (2.4%)GRFD: n=33 (11.5%) | 1-2 yrs.Missing observations:1 yr.: n=51 (35.4%)2 yrs.: n=65 (45.1%) | 1 yr.: n=10 (6.9%)2 yrs.: n=13 (9.2%) | Conversion according to CAARMS or reports from family doctorsIn total sample (n=23 conversions):Schizophrenia: 34.8%Schizoaffective disorder: 21.7%Delusional disorder: 13%Psychosis NOS: 13%Brief psychotic disorder: 4.3%**All non-affective psychosis: 100%** |

| **Study,** **GE** | **Setting & response/ participation rate** | **Sample characteristics****(size, age, gender, co-morbidities)** | **Assessment and baseline distribution of CHR criteria**  | **Follow-up & missing observations per follow-up (cumulative)** | **Annual conversion rate**  | **Conversion assessment & diagnoses** |
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| **The Netherlands** |
| **[57]**Ziermans et al. 2011 [33]**GE: 2+** | No specialized early detection service:Department of Child and Adolescent Psychiatry, University Medical Centre UtrechtObservational study% response: Not reported | N=72Age: 15.3±1.9 yrs. (12-18 yrs.)Assigned age group: CAD% male: 61.1%Co-morbidities: 64.6% any DSM-IV axis-I disorder, 30.9% depressive disorders  | SIPS 3.0 andSPI-A (brief)APS: n=65 (90.3%)BLIPS: n=4 (5.6%)GRFD: n=3 (4.2%)COGDIS: n=39 (54.2%)UHR+COGDIS: n=32 (44.4%) | 2 yrs. Missing observations:1 yr.: n=10 (13.9%)2 yrs.: n=14 (19.4%) | 1 yr. overall: n=7 (9.7%)2 yrs. overall: n=9 (12.5%)2 yrs. APS: n=9 (13.8%)2 yrs. COGDIS: n=7 (18.0%)2 yrs. BLIPS: n=1 (25.0%)2 yrs. GRFD: n=1 (33.3%)2 yrs. UHR+COGDIS: n=7 (21.9%) | Conversion according to SIPSSchizophrenia: 66.7%Schizoaffective disorder: 11.1%Psychosis NOS: 11.1%**All non-affective psychosis: 88.9%**Bipolar I disorder with pscchotic features: 11.1%**All affective psychosis: 11.1%**  |
| **[92]**Velthorst et al., 2013 [34] Dutch Prediction of Psychosis Study (DUPS)**GE: 2+** | Mixed: Specialized early detection service at the Adolescent Clinic of the Academic Medical Centre (AMC) , University of Amsterdam and Department of Child and Adolescent Psychiatry, University Medical Centre UtrechtObservational study% response: Not reported | N=148Age: 17.2±3.8 yrs. (11-29 yrs.)Assigned age group: YOUTH% male: 64.2%Co-morbidities: Not reported | SIPS 3.0 andSPI-A (brief)APS: n=133 (89.9%)BLIPS: n=10 (7%)GRFD: n=6 (4%)COGDIS: n=55 (37%) | 2 yrs.Missing observations:2 yrs.: n=46 (31.1%) | 2 yrs.: n=28 (18.9%) | Conversion: Positive symptom according to PANSS at psychotic intensity >7 daysDiagnoses: Not reported |

| **Study,** **GE** | **Setting & response/ participation rate** | **Sample characteristics****(size, age, gender, co-morbidities)** | **Assessment and baseline distribution of CHR criteria**  | **Follow-up & missing observations per follow-up (cumulative)** | **Annual conversion rate**  | **Conversion assessment & diagnoses** |
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| **[93]**van der Gaag et al. 2012 [35]Dutch Early Detection and Intervention Evaluation (EDIE-NL) trial**GE: 2+** | Mixed, centres with and without specialized early detection services included. Four sites in the Netherlands recruited participants.Intervention study: CBT vs. TAU% response: 66.5% of eligible sample (n=30) were randomized (n=201) | N=103 of TAU conditionAge: 22.6±5.5 yrs (14-35 yrs.)Assigned age group: MIXIn total sample (n=201): % male: 48.5%Co-morbidities of total sample (n=201): 31.3% anxiety, 30.8% depressive, and 7.5% personality disorders, 6.5% ADHD, 6.0% substance-use disorders, 5.0% PTSD, 3.0% oppositional defiant disorder, 2.5% Asperger  | CAARMS(2006 version)Distribution in total sample (n=201)APS: n=164 (81.6%)BLIPS: n=3 (1.5%)GRFD: n=34 (16.9%) | 1.5 yrs.Missing observations:1.5 yrs.: n=13 (17.3%) | 6 mths.: n=14 (13.4%)1 yr.: n=20 (19.4%)1.5 yrs.: n=22 (21.4%) | Conversion according to CAARMSDiagnoses in total sample (n=32 conversions):Schizophrenia: 65.6%Schizoaffective disorder: 3.1%Brief psychotic disorder: 3.1%Psychosis NOS: 9.4%**All non-affective psychosis: 81.2%**Depression with psychotic features: 12.5%Bipolar disorder with psychotic features: 6.3%**All affective psychosis: 18.8%**  |
| **Finland** |
| **[101]**Manninen et al. 2013 [36]**GE: 2-** | No specialized early detection service. Reform schoolObservational study% response: 83.9% of 62 eligible residents | N=52Age: 15-18 yrs.Assigned age group: CAD% male: 62.3%Co-morbidities: 23.1% with mood disorder, 34.6% with conduct disorder, 9.6% with substance use, 7.8% with attention disorder | SIPS APS: n=7 (13.5%)BLIPS: 0%GRFD: 0%None: n=45 (86.5%) | 5 yrs.Missing observations:0%  | All: n=4 (7.8%)APS: n=1 (14.3%) None: n=3 (6.7%); 2 substance-induced | Psychiatric baseline and outcome diagnoses (ICD-10) were obtained from the Finnish Hospital Discharge RegisterNote: Converters might not have sought help after conversion or been treated as outpatients and, consequently, might not show in hospital registersDiagnoses: Not reported |

| **Study,** **GE** | **Setting & response/ participation rate** | **Sample characteristics****(size, age, gender, co-morbidities)** | **Assessment and baseline distribution of CHR criteria**  | **Follow-up & missing observations per follow-up (cumulative)** | **Annual conversion rate**  | **Conversion assessment & diagnoses** |
| --- | --- | --- | --- | --- | --- | --- |
| **[102]**Lindgren et al. 2014 [37] Helsiniki Prodromal Study**GE: 2+** | No specialized early detection service. Adolescent psychiatric patients in HelsinkiObservational study% response: 75.0% of 145 invited patients (n=232) completed study protocol (n=174); n=14 excluded for past or present psychosis | N=161Age: 16.6±0.9 yrs. (15-18 yrs.)Assigned age group: CAD% male: 33.5%Co-morbidities: 75.8% mood disorders, 31.7% anxiety disorders, 9.3% eating disorders, 14.3% substance-use disorders, 13.7% disorders usually diagnosed in infancy, childhood, or adolescence | SIPSUHR: n=54 (33.5%)APS: n=53 (98.1%)BLIPS: 0%GRFD: n=3 (5.6%)None: n=107 (66.5%) | 1 yr.Missing observations:8.1% for conversion status | Overall: n=3 (5.7%)APS: n=3 (5.7%)GRFD: 0%None: n=2 (1.9%) | Conversion according to SIPS and/or medical records Psychosis NOS: 80%**All non-affective psychosis: 80%**Depression with psychotic features: 20%**All affective psychosis: 20%** |
| **Switzerland** |
| **[99]**Riecher-Rössler et al. 2009 [38]**GE: 2+** | Specialized early detection service: FEPSY Early Detection Clinic At the University Psychiatric Outpatient Department, BaselObservational study% response: 60.4% of eligible sample (n=106) | N=64Age: 26.5±8.6 yrs. (minimum age: 18 yrs.)Assigned age group: ADULT% male: 59.4%Co-morbidities: Not reported | BSIP Of 53 with follow-up:APS or BLIPS: n=37 (69.8%)Genetic risk: n=2 (3.7%)APS or BLIPS and genetic risk: n=10 (18.9%)Unspecific risk: n=4 (7.6%) | Up to 7 yrs. (mean 5.4 yrs.)Missing observations:7 yrs.:n=11 (17.2%) | 1 yr.: n=15 (28.3%)2 yrs.: n=19 (35.8%)3 yrs.: n=20 (37.7%)> 3 yrs.: n=21 (39.6%) | Conversion according to BPRS Diagnoses: Not reported |

| **Study,** **GE** | **Setting & response/ participation rate** | **Sample characteristics****(size, age, gender, co-morbidities)** | **Assessment and baseline distribution of CHR criteria**  | **Follow-up & missing observations per follow-up (cumulative)** | **Annual conversion rate**  | **Conversion assessment & diagnoses** |
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| **[100]**Simon et al. 2012 [39]**GE: 2+** | Specialized early detection service: Bruderholz Early Psychosis ServiceObservational study% response: Not reported | N=148Age: 14-40 yrs. UHR: 20.4±5.2 yrs. COPER: 21.7±4.2 yrs.  none: 21.6±5.0 yrs.Assigned age group: MIX% male: 67.6%Co-morbidities in CHR sample: 65.7% mood/anxiety disorders, 8.1% adjustment disorder, 6.1% dissociative disorder | SIPS 3.0 and SPI-Aany CHR: n=99 (66.9%)any UHR: n=73 (49.3%) APS: n=68 (46.0%)BLIPS: n=3 (2.0%)GRFD: n=2 (1.4%) COPER (UHR criteria excluded): n=26 (17.6%)none: n=49 (33.1%) | 1-2 yrs. (mean 670 days)Missing observations:UHR1 yr.: n=17 (23.3%)2 yrs.: n=40 (54.8%)COPER1 yr.: n=11 (42.3%)2 yrs.: n=10 (38.5%)none1 yr.: n=23 (46.9%)2 yrs.: n=31 (63.3%) | all CHR:1 yr.: n=7 (12.5%)2 yrs.: n=10 (23.8%)UHR, 1 yr.: n=7 (9.6%)UHR, 2 yrs.: n=10 (13.7%)APS, 1 yr.: n= 7 (10.3%)APS, 2 yrs.: n=10 (14.7%)all other CHR criteria: 0% | Conversion according to SIPS Schizophrenia: 90%**All non-affective psychosis: 90%****All affective psychosis: 10%** |
| **Multiple or other European countries** |
| **[103]**Ruhrmann et al. 2010 [40]; Salokangas et al. 2012 [41]European Prediction of Psychosis Study (EPOS) incl. Germany, Finland, UK and the Netherlands**GE: 2+** | Mixed, centres with and without specialized early detection services included.Observational study% response: 48% of eligible sample (n=513) | N=245Age: 23.0±5.2yrs. (16-35 yrs.)Assigned age group: ADULT% male: 55.9%Co-morbidities: 62.0% any and 22.4% even 2-3 current axis-I disorders; 39.2% anxiety disorder, 34.3% unipolar depressive disorders, 4.1% bipolar disorders, 6.5% somatoform disorders, 3.2% other disorders | SPI-A (brief) andSIPS (3.0 with modified GRFD)Only COGDIS: 25 (10.2%) Only UHR: 74 (30.2%)COGDIS+UHR: 146 (59.6%) | 1.5 yrs.Missing observations:1.5 yrs.: n=62 (25.3%) | 1.5 yrs.: n=37 (15.1%)1.5 yrs. only COGDIS: 5%1.5 yrs. only UHR: 18%1.5 yrs. COGDIS+UHR: 22% | Conversion assessed with SIPS: any positive item = 6 for >7 daysSchizophrenia: 62.2%Schizophreniform disorder: 8.1%Brief psychotic disorder: 5.4%Schizoaffective disorder: 8.1%**All non-affective psychosis: 83.8%**Mood disorder with psychotic features: 16.2%**All affective psychosis: 16.2%** |

| **Study,** **GE** | **Setting & response/ participation rate** | **Sample characteristics****(size, age, gender, co-morbidities)** | **Assessment and baseline distribution of CHR criteria**  | **Follow-up & missing observations per follow-up (cumulative)** | **Annual conversion rate**  | **Conversion assessment & diagnoses** |
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| **[104]**Amminger et al. 2010 [42]**GE: 2+** | No specialized early detection service: First episode psycho-sis detection unit of the Department of Child and Adolescent Psychiatry, Vienna, AustriaIntervention study: Omega-3 fatty acids vs. placebo% response: 76.4% of eligible sample (n=106) were randomized (n=81) | N=40 of placebo condition Age: 16.0±1.7 yrs. (13-25 yrs.)Assigned age group: CAD% male: 32.5%Co-morbidities: Not reported | PANSS APS: n=22 (55.0%) BLIPS: n=3 (7.5%)GRFD: 0%APS+BLIPS: n=13 (32.5%)APS+GRFD: n=2 (5.0%) | 1 yr.Missing observations:1 yr.: n=2 (5.0%) | 1 yr.: n=11 (27.5%) | Conversion according to BPRS and PANSS Schizophrenia: 72.7%Schizophreniform disorder: 9.1%Schizoaffective disorder: 9.1%**All non-affective psychosis: 90.9%**Bipolar I disorder with psychotic features: 9.1%**All affective psychosis: 9.1%** |
| **[105]**Fusar-Poli et al. 2012 [43]**GE: 2+** | Specialized early detection service:Programma 2000, Milan, ItalyObservational study% response: Not reported | N=40Age: 20.7±5.3 yrs. (15-35 yrs.)Assigned age group: MIX% male: 47.5%Co-morbidities: Not reported | CAARMS (Italian translation)APS: n=36 (90%)BLIPS: n=1 (2.5%)GRFD: n=3 (7.5%) | 1 yr.Missing observations:0% | 1 yr.: n=9 (22.5%) | Conversion according to CAARMS Diagnoses: Not reported |

| **Study,** **GE** | **Setting & response/ participation rate** | **Sample characteristics****(size, age, gender, co-morbidities)** | **Assessment and baseline distribution of CHR criteria**  | **Follow-up & missing observations per follow-up (cumulative)** | **Annual conversion rate**  | **Conversion assessment & diagnoses** |
| --- | --- | --- | --- | --- | --- | --- |
| **[106]**Lemos-Giráldez et al. 2009 [44]**GE: 2-** | Specialized early detection service: Prevention program for psychosis (P3), Hospital Sierrallana, Torrelavega, SpainObservational study Various recruitment sources incl. website, no participant was help-seeking% response: Not applicable, only contact with persons willing to participate | N=61Age: 21.7±3.8 yrs. (15-31 yrs.)Assigned age group: ADULT% male: 65.6%Co-morbidities: Not reported | SIPS 3.0APS: n=52 (85.2%)BLIPS: n=3 (4.9%)GRFD: n=6 (9.8%) | 3 yrs.Missing observations:3 yrs.: n=16 (26.2%) | 1 yr.: n=11 (18.0%)3 yrs.: n=14 (23.0%) | Conversion according to SIPS Schizophrenia: 78.6%Schizophreniform disorder: 7.1%Substance-induced psychosis: 14.3%**All non-affective psychosis: 100%**Converters significantly older at baseline. |
| **[107]**Kiss et al. 2012 [45]; Letter to the Editor**GE: 2+** | No specialized early detection service. Outpatient units of the University of Szeged, Bács-Kiskun Country Hospital, Kecskemét, & National Psychiatry Center, Semmelweis University, Budapest, HungaryObservational study% response: Not reported | N=97Age: Not reportedNo age group assignment.Gender: Not reportedCo-morbidities: Not reported | CAARMS (before 2006 version)UHR: n=97 (100%) | 1 yr.Missing observations:Not reported | 1 yr.: n=31 (32.0%) | Conversion according to CAARMS Psychotic disorders (schizophrenia, schizophreniform disorder, psychotic mood disorder): 100% |

| **Study,** **GE** | **Setting & response/ participation rate** | **Sample characteristics****(size, age, gender, co-morbidities)** | **Assessment and baseline distribution of CHR criteria**  | **Follow-up & missing observations per follow-up (cumulative)** | **Annual conversion rate**  | **Conversion assessment & diagnoses** |
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| **[108]**Kotlicka-Antczak et al. 2014 [46]; Brief report**GE: 2+** | Specialized early detection service: Programme of Recognition and Therapy (PORT), Central Clinical Hospital of Lodz, PolandObservational study% response: Not reported | N=81Age: 15-29 yrs.Assigned age group: MIXGender: Not reportedCo-morbidities: Not reported | CAARMS 2006 versionUHR: n=81 (100%) (all plus functional decline within past 12 mths.) | ≤3 yrs.Missing observations:3 yrs.: n=16 (19.7%) | Overall: n=15 (18.5%)  | Conversion according to CAARMSDiagnoses: Not reported |
| **Asian countries** |
| **[109]**Lam et al. 2006 [47]**GE: 2+** | Specialized early detection service: Early Assessment Service for Young People with psychosis (EASY), Hong-Kong, ChinaObservational study% response: 92.5% of eligible sample (n=67) | N=62Age: 16.2±3.7 yrs. (6.9-23.5 yrs.)Assigned age group: YOUTH% male: 58.1%Co-morbidities: 93.5% had a non-psychotic DSM-IV diagnosis, 6.5% were diagnosed with brief psychosis or substance-use psychosis due to BLIPS | CAARMS (before 2006 version) and PANSS APS: n=51 (82.2%)BLIPS: n=12 (19.4%)GRFD: n=12 (19.4%) | 6 mths.Missing observations:n=9 (14.5%) | 3 mths.: n=16 (25.8%)6 mths.: n=18 (29.0%) | Conversion according to CAARMS Schizophreniform disorder: 61.1%Schizoaffective disorder: 11.1%Psychosis NOS: 16.6%**All non-affective psychosis: 88.8%**Bipolar disorder with psychotic features: 5.6%Depression with psychotic features: 5.6%**All affective psychosis: 11.2%** |

| **Study,** **GE** | **Setting & response/ participation rate** | **Sample characteristics****(size, age, gender, co-morbidities)** | **Assessment and baseline distribution of CHR criteria**  | **Follow-up & missing observations per follow-up (cumulative)** | **Annual conversion rate**  | **Conversion assessment & diagnoses** |
| --- | --- | --- | --- | --- | --- | --- |
| **[113]**Zhang et al. 2014 [48]**GE: 2+** | No specialized early detection service: Shanghai Psychotherapy and Psychological Counselling Centre (SPCC), ChinaObservational study% response: 82.3% of invited screening positives on the PQ-B (n=1681) were interviewed (n=1384) | N=89Age: 25.89±7.54 yrs. (15-45 yrs.)Assigned age group: ADULT% male: 50.6%Co-morbidities: 24.7% mood or anxiety disorder, 3.4% stress related disorder, 7.9% other disorder or not yet determined  | SIPS 3.0APS: n=65 (73%)BLIPS: n=3 (3.4%)GRFD: n=25 (28.1%) | 2 yrs.Missing observations:2 yrs.: n=36 (40.5%) | 2 yrs.: n=14 (15.7%) | Conversion according to SIPS Schizophrenia: 85.7%Other psychotic disorder according to POPS: 14.3%**All non-affective psychosis: 85.7%-100%** |
| **[110]**Lee et al. 2013 [49]**GE: 2+** | No specialized early detection service: Longitudinal Youth At-Risk Study (LYRIKS), SingaporeObservational study of both help-seeking and non-help-seeking persons% response: 39.1% of invited persons (n=2368) agreed to assessment (n=926); n=667 were accepted into the study | N=667Age: UHR: 21.3±3.5 yrs.;none: 21.7±3.4 yrs. (14-29 yrs.)Assigned age group: ADULT% male: 60.1%Co-morbidities: in UHR: 78.0% any axis-I; 65.3% mood, and 22.5% anxiety disorders, 11.0% OCD, 19.6% substance-use disorders, 5.8% adjustment disorders incl. PTSDin none: 18.8% any axis-I disorder; 12.2% mood, and 3.4% anxiety disorders, 1.8% OCD, 5.1% substance-use disorders, 1.2% adjustment disorders incl. PTSD | CAARMS (before 2006 version)UHR: n=173 (25.9%) of these 76.3% help-seekersAPS: n=144 (83.7%)BLIPS: n=6 (3.5%)GRFD: n=49 (28.5%)none: n=494 (74.1%) of these 14.2% help-seekers | 6 mths.Missing observations:none; 2 yrs.: n=148 (30.0%) UHR; 2 yrs.: 0% | 6 mths., UHR: n=6 (3.5%)6 mths., none: 0% | Conversion according to PANSS and SCIDDiagnoses: Not reported |

| **Study,** **GE** | **Setting & response/ participation rate** | **Sample characteristics****(size, age, gender, co-morbidities)** | **Assessment and baseline distribution of CHR criteria**  | **Follow-up & missing observations per follow-up (cumulative)** | **Annual conversion rate**  | **Conversion assessment & diagnoses** |
| --- | --- | --- | --- | --- | --- | --- |
| **[111]**Katsura et al. 2014 [50]**GE: 2+** | Specialized early detection service: Sendai ARMS and first-episode (SAFE) clinic, Sendai, JapanObservational study% response: 95.5% of eligible sample (n=111) | N=106Age: 20.0±4.3 yrs.(14-35 yrs.)Assigned age group: MIX% male: 37.7%Co-morbidities: Not reported | CAARMS (before 2006 version) APS: n=99 (93.4%)BLIPS: n=4 (3.8%)GRFD: n=3 (2.8%) | ≤7.4 yrs.(mean=3.2 yrs.; Mdn=2.7 yrs.; min. 1 yr.)Missing observations:1 yr.: n=23 (21.7%)>1 yr.: Not reported | Overall: n=14 (13.2%)1 yr.: n=10 (9.4%)2 yrs.: n=13 (12.3%)3 yrs.: n=14 (13.2%)APS: n=12 (18.3%)BLIPS: n=2 (50.0%)GRFD: 0% | Conversion according to CAARMS Schizophrenia: 57.1%Schizophreniform disorder: 7.1%Delusional disorder: 7.1%Psychosis NOS: 28.6%**All non-affective psychosis: 100%** |
| **[112]**Koike et al. 2013 [51]**GE: 2+** | No specialized early detection service: Outpatient and inpatient units of the University of Tokyo Hospital, JapanObservational study% response: 74% of eligible sample (n=50) | N=37Age: 21.3±3.6 yrs. (15-30 yrs.)Assigned age group: ADULT% male: 54.1%Co-morbidities: Not reported | SIPSAPS: n=32 (86.5%)BLIPS: n=3 (8.1%)GRFD: n=10 (27%) | 2 yrs.Missing observations:6 mths.: n=10 (27.0%)12 mths.: n=13 (37.1%)24 mths.: n=20 (54.1%) | Overall: n=6 (16.2%)6 mths.: n=2 (5.4%)12 mths.: n=2 (5.4%)24 mths.: n=6 (16.2%) | Conversion according to SIPS Diagnoses: Not reported |
| **[114]**Kim et al. 2012 [52]**GE: 2+** | Specialized early detection service: Seoul Youth Clinic, South KoreaObservational study% response: Not reported | N=78Age: 21.3±4.2 yrs.Assigned age group: MIX% male: 87.2%Co-morbidities: 61% mood disorders, 17% anxiety disorders, 3% other disorders  | CAARMS (before 2006 version)APS: n=71 (91%)BLIPS: n=1 (1.3%)GRFD: n=13 (16.7%) | ≤7 yrs.(mean time to conversion: 412 days; 32-1127 days) Missing observations:Overall: n=11 (14.1%) | Overall: n=14 (20.9%)APS: n=13 (18.3%)BLIPS: n=1 (100%)GRFD: n=1 (7.7%) | Conversion according to DSM-IVSchizophrenia: n=10**All non-affective psychosis: 71.4%**Bipolar I with psychotic features: n=4**All affective psychosis: 28.6%** |

# **S.4. Supplementary Table 2**

STable 2 Effect sizes (*Ei*, $\overline{E}$ or $\overline{E^{\*}}$)at different follow-ups *tx* in samples meeting COPER, single UHR criteria (each irrespective of the potential presence of other CHR criteria) or certain UHR-COGDIS combinations as well as in CHR-negative samples

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Study** | ***tx*** | **N** | ***Ei*,** $\overline{E}$ **or** $\overline{E^{\*}}$ | **95% CIs** | ***Q (df)*** | ***I*2** | ***z*** |
| **Cognitive-perceptive basic symptoms (COPER)** |
| [25] 6,a | 6 mth. | 146 | 0.158 | 0.129; 0.187 |  |  |  |
| [25] 6,a | 1 yr. | 146 | 0.247 | 0.212; 0.282 |  |  |  |
| [20] 5,a | 1 yr. | 106 | 0.198 | 0.160; 0.236 |  |  |  |
| [23] 4,a | 1 yr. | 64 | 0.139 | 0.097; 0.181 |  |  |  |
| [39] 6,b | 1 yr. | 26 | 0 # | 0; 0 |  |  |  |
| **pooled** | **1 yr.** |  | **0.144** | **0.072; 0.215** | **81.169 (3)** | **96.3%** | **1.976\*** |
| [25] 6,a | 2 yrs. | 146 | 0.329 | 0.291; 0.367 |  |  |  |
| [20] 5,a | 2 yrs. | 106 | 0.368 | 0.322; 0.414 |  |  |  |
| [23] 4,a | 2 yrs. | 64 | 0.154 | 0.110; 0.198 |  |  |  |
| [39] 6,b | 2 yrs. | 26 | 0 # | 0; 0 |  |  |  |
| **pooled** | **2 yrs.** |  | **0.211** | **0.107; 0.315** | **142.066 (3)** | **97.9%** | **1.989\*** |
| [20] 5,a | 3 yrs. | 106 | 0.500 | 0.452; 0.548 |  |  |  |
| [20] 5,a | 4 yrs. | 106 | 0.557 | 0.510; 0.604 |  |  |  |
| [20] 5,a | >4 yrs. | 106 | 0.651 | 0.606; 0.696 |  |  |  |

Note: Attenuated and transient psychotic symptoms, and UHR criteria, respectively, were excluded in [23] and [39].

Upper number indicates scale used for the assessment of CHR criteria (4: ERIraos; 5: BSABS; and 6: SPI-A)

Upper small letter indicates age group of sample (a: ADULT; b: MIX; c: YOUTH; and d: CAD)

F: according to fixed-effects model

\* *z* > 1.96: significant on 5% level; \*\* *z* > 2.58: significant on 1% level

# Because inclusion of extreme *Ei* values, i.e., 0 or 1, would cause an undue division by 0 in the calculation of $\overline{E}$ or $\overline{E^{\*}}$, 0 was replaced by 0.001 and 1 by 0.999 in their calculation.

STable 2 cont. (1)

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  **Study** | ***tx*** | **N** | ***Ei*,** $\overline{E}$ **or** $\overline{E^{\*}}$ | **95% CIs** | ***Q (df)*** | ***I*2** | ***Z*** |
| **Respective examined clinical high risk criteria not fulfilled (CHR-negative)** |
|  [22] 1+6,a;UHR/COGDIS | 6 mth. | 52 | 0.019 | -0.001; 0.039 |  |  |  |
|  [49] 2,a;UHR | 6 mth. | 494 | 0 # | 0; 0 |  |  |  |
|  [7,8] 2,c;UHR | 6 mth. | 173 | 0.006 | 0.000; 0.011 |  |  |  |
|  **pooled F** | **6 mth.** |  | **<0.001** | **-0.0002; 0.0002** | **2.020 (2)** | **1.0%** | **0.148** |
|  [22] 1+6,a;UHR/COGDIS | 1 yr. | 52 | 0.038 | 0.012; 0.064 |  |  |  |
|  [39] 1,b;UHR/COPER | 1 yr. | 49 | 0 # | 0; 0 |  |  |  |
|  [37] 1,d;UHR | 1 yr. | 107 | 0.019 | 0.005; 0.033 |  |  |  |
|  **pooled F** | **1 yr.** |  | **0.001** | **-0.001; 0.003** | **3.650 (2)** | **45.2%** | **0.394** |
|  [22] 1+6,a;UHR/COGDIS | 2 yrs. | 52 | 0.077 | 0.040; 0.114 |  |  |  |
|  [39] 1,b;UHR/COPER | 2 yrs. | 49 | 0 # | 0; 0 |  |  |  |
|  [7,8] 2,c;UHR | 2 yrs. | 173 | 0.012 | 0.004; 0.020 |  |  |  |
|  **pooled** | **2 yrs.** |  | **0.009** | **<0.001; 0.017** | **6.297 (2)** | **68.2%** | **0.994** |
|  [22] 1+6,a;UHR/COGDIS | 3 yrs. | 52 | 0.115 | 0.071; 0.159 |  |  |  |
|  [22] 1+6,a;UHR/COGDIS | 4 yrs. | 52 | 0.115 | 0.071; 0.159 |  |  |  |
|  [22] 1+6,a;UHR/COGDIS | >4 yrs. | 52 | 0.154 | 0.105; 0.203 |  |  |  |
|  [36] 1,d;UHR | >4 yrs. | 45 | 0.067 | 0.030; 0.104 |  |  |  |
|  **pooled F** | **>4 yrs.** |  | **0.098** | **0.069; 0.128** | **1.941 (1)** | **48.5%** | **3.279\*\*** |

Upper number indicates scale used for the assessment of CHR criteria (1: SIPS; 2: CAARMS; 3: CAARMS 2006 version; 4: other scale; 5: BSABS; and 6: SPI-A)

Upper small letter indicates age group of sample (a: ADULT; b: MIX; c: YOUTH; and d: CAD)

F: according to fixed-effects model

\* *z* > 1.96: significant on 5% level; \*\* *z* > 2.58: significant on 1% level

# Because inclusion of extreme *Ei* values, i.e., 0 or 1, would cause an undue division by 0 in the calculation of $\overline{E}$ or $\overline{E^{\*}}$, 0 was replaced by 0.001 and 1 by 0.999 in their calculation.

STable 2 cont. (2)

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Study** | ***tx*** | **N** | ***Ei*,** $\overline{E}$ **or** $\overline{E^{\*}}$ | **95% CIs** | ***Q (df)*** | ***I*2** | ***Z*** |
| **Attenuated psychotic symptoms (APS) criterion** |
| [5] 2,b | 6 mth. | 664 | 0.076 | 0.067; 0.085 |  |  |  |
| [17] 1,a | 6 mth. | 24 | 0.125 | 0.059; 0.191 |  |  |  |
| **pooled F** | **6 mth.** |  | **0.077** | **0.068; 0.086** | **0.512 (1)** | **0%** | **8.189\*\*** |
| [39] 1,b | 1 yr. | 68 | 0.103 | 0.066; 0.140 |  |  |  |
| [37] 1,d | 1 yr. | 53 | 0.057 | 0.026; 0.088 |  |  |  |
| **pooled F** | **1 yr.** |  | **0.076** | **0.052; 0.100** | **0.882 (1)** | **0%** | **3.154\*\*** |
| [39] 1,b | 2 yrs. | 68 | 0.147 | 0.103; 0.191 |  |  |  |
| [33] 1,d | 2 yrs. | 65 | 0.138 | 0.096; 0.180 |  |  |  |
| [52] 1,c | 2 yrs. | 71 | 0.183 | 0.138; 0.228 |  |  |  |
| [14] 1,c | 2 yrs. | 65 | 0.262 | 0.208; 0.315 |  |  |  |
| **pooled F** | **2 yrs.** |  | **0.174** | **0.151; 0.197** | **3.704 (3)** | **19.0%** | **7.517\*\*** |
| [10] 2,b | 3 yrs. | 43 | 0.006 | 0.437; 0.587 |  |  |  |
| [50] 1,b | 3 yrs. | 99 | 0.121 | 0.088; 0.154 |  |  |  |
| [12] 1,c | 3 yrs. | 282 | 0.280 | 0.249; 0.311 |  |  |  |
| **pooled** | **3 yrs.** |  | **0.291** | **0.205; 0.378** | **27.012 (2)** | **92.6%** | **3.296 \*\*** |
| [15] 1,d | >4 yrs. | 101 | 0.149 | 0.115; 0.183 |  |  |  |
| [36] 1,d | >4 yrs. | 7 | 0.143 | 0.013; 0.273 |  |  |  |
| **pooled F** | **>4 yrs.** |  | **0.149** | **0.116; 0.181** | **0.002 (1)** | **0%** | **4.435\*\*** |

Upper number indicates scale used for the assessment of CHR criteria (1: SIPS; 2: CAARMS; 3: CAARMS 2006 version; 4: other scale; 5: BSABS; and 6: SPI-A)

Upper small letter indicates age group of sample (a: ADULT; b: MIX; c: YOUTH; and d: CAD)

F: according to fixed-effects model

\* *z* > 1.96: significant on 5% level; \*\* *z* > 2.58: significant on 1% level

# Because inclusion of extreme *Ei* values, i.e., 0 or 1, would cause an undue division by 0 in the calculation of $\overline{E}$ or $\overline{E^{\*}}$, 0 was replaced by 0.001 and 1 by 0.999 in their calculation.

STable 2 cont.(3)

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Study** | ***tx*** | **N** | ***Ei*,** $\overline{E}$ **or** $\overline{E^{\*}}$ | **95% CIs** | ***Q (df)*** | ***I*2** | ***Z*** |
| **Transient psychotic symptoms (BLIPS) criterion** |
| [5] 2,c | 6 mth. | 36 | 0.133 | 0.077; 0.189 |  |  |  |
| [39] 1,b | 1 yr. | 3 | 0 # | 0; 0 |  |  |  |
| [52] 2,b | 2 yrs. | 1 | 1 # | 0.606; 1.194 |  |  |  |
| [14] 1,c | 2 yrs. | 17 | 0.588 | 0.472; 0.704 |  |  |  |
| [33] 1,d | 2 yrs. | 4 | 0.250 | 0.038; 0.462 |  |  |  |
| [39] 1,b | 2 yrs. | 3 | 0 # | 0; 0 |  |  |  |
| **pooled** | **2 yrs.** |  | **0.466** | **0.188; 0.744** | **31.740 (3)** | **90.5%** | **1.642** |
| [10] 2,c | 3 yrs. | 23 | 0.609 | 0.509; 0.709 |  |  |  |
| [50] 2,b | 3 yrs. | 4 | 0.500 | 0.255; 0.745 |  |  |  |
| [12] 1,c | 3 yrs. | 7 | 0.429 | 0.246; 0.612 |  |  |  |
| **pooled F** | **3 yrs.** |  | **0.518** | **0.379; 0.656** | **5.421(2)** | **63.1%** | **3.659\*\*** |
| **Genetic risk and functional decline (GRFD) criterion** |
| [5] 2,c | 6 mth. | 209 | 0.062 | 0.045; 0.079 |  |  |  |
| [37] 1,d | 1 yr. | 3 | 0 # | 0; 0 |  |  |  |
| [39] 1,b | 1 yr. | 2 | 0 # | 0; 0 |  |  |  |
| **pooled F** | **1 yr.** |  | **0** | **0; 0** | **0 (1)** | **0%** | **Div/0** |
| [14] 1,c | 2 yrs. | 2 | 0 # | 0; 0 |  |  |  |
| [39] 1,b | 2 yrs. | 2 | 0 # | 0; 0 |  |  |  |
| [33] 1,d | 2 yrs. | 3 | 0.333 | -0.511; 1.177 |  |  |  |
| [52] 2,b | 2 yrs. | 13 | 0.077 | 0.004; 0.150 |  |  |  |
| **pooled F** | **2 yrs.** |  | **0.019** | **-0.012; 0.050** | **0.760 (3)** | **0%** | **0.588** |
| [10] 2,c | 3 yrs. | 19 | 0.105 | 0.036; 0.174 |  |  |  |
| [12] 1,c | 3 yrs. | 2 | 0 # | 0; 0 |  |  |  |
| [50] 2,b | 3 yrs. | 3 | 0 # | 0; 0 |  |  |  |
| **pooled F** | **3 yrs.** |  | **0.014** | **-0.008; 0.037** | **1.802 (2)** | **0%** | **0.637** |

Upper number indicates scale used for the assessment of CHR criteria (1: SIPS; 2: CAARMS; 3: CAARMS 2006 version; 4: other scale; 5: BSABS; and 6: SPI-A)

Upper small letter indicates age group of sample (a: ADULT; b: MIX; c: YOUTH; and d: CAD)

F: according to fixed-effects model

\* *z* > 1.96: significant on 5% level; \*\* *z* > 2.58: significant on 1% level

# Because inclusion of extreme *Ei* values, i.e., 0 or 1, would cause an undue division by 0 in the calculation of $\overline{E}$ or $\overline{E^{\*}}$, 0 was replaced by 0.001 and 1 by 0.999 in their calculation.

STable 2 cont.(4)

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Study** | ***tx*** | **N** | ***Ei*,** $\overline{E}$ **or** $\overline{E^{\*}}$ | **95% CIs** | ***Q (df)*** | ***I*2** | ***Z*** |
| **Ultra-high risk (UHR) criteria *and/or* Cognitive disturbances (COGDIS)** |
| [22] 1+6,a | 6 mth. | 194 | 0.149 | 0.123; 0.175 |  |  |  |
| [22] 1+6,a | 1 yr. | 194 | 0.258 | 0.227; 0.289 |  |  |  |
| [33] 1+6,d | 1 yr. | 72 | 0.097 | 0.063; 0.131 |  |  |  |
| **pooled** | **1 yr.** |  | **0.178** | **0.099; 0.257** | **11.782 (1)** | **91.5%** | **2.213\*** |
| [22] 1+6,a | 2 yrs. | 194 | 0.335 | 0.301; 0.369 |  |  |  |
| [40] 1+6,a | 2 yrs. | 245 | 0.151 | 0.129; 0.173 |  |  |  |
| [33] 1+6,a | 2 yrs. | 72 | 0.125 | 0.087; 0.163 |  |  |  |
| [34] 1+6,a | 2 yrs. | 148 | 0.189 | 0.158; 0.220 |  |  |  |
| **pooled** | **2 yrs.** |  | **0.199** | **0.157; 0.242** | **23.380 (3)** | **87.2%** | **4.596\*\*** |
| [22] 1+6,a | 3 yrs. | 194 | 0.371 | 0.337; 0.405 |  |  |  |
| [22] 1+6,a | 4 yrs. | 194 | 0.387 | 0.353; 0.421 |  |  |  |
| [24] 2+5,a | 4 yrs. | 45 | 0.311 | 0.243; 0.379 |  |  |  |
| **pooled F** | **4 yrs.** |  | **0.372** | **0.341; 0.402** | **0.963 (1)** | **0%** | **12.000\*\*** |
| [22] 1+6,a | >4 yrs. | 194 | 0.402 | 0.368; 0.436 |  |  |  |
| **Ultra-high risk (UHR) criteria *plus* Cognitive disturbances (COGDIS)** |
| [22] 1+6,a | 6 mth. | 127 | 0.165 | 0.132; 0.198 |  |  |  |
| [22] 1+6,a | 1 yr. | 127 | 0.299 | 0.259; 0.339 |  |  |  |
| [22] 1+6,a | 2 yrs. | 127 | 0.409 | 0.366; 0.452 |  |  |  |
| [40] 1+6,a | 2 yrs. | 146 | 0.171 | 0.140; 0.202 |  |  |  |
| [33] 1+6,d | 2 yrs. | 32 | 0.219 | 0.148; 0.290 |  |  |  |
| **pooled** | **2 yrs.** |  | **0.267** | **0.185; 0.350** | **19.727 (2)** | **89.9%** | **3.174\*\*** |
| [22] 1+6,a | 3 yrs. | 127 | 0.449 | 0.406; 0.492 |  |  |  |
| [22] 1+6,a | 4 yrs. | 127 | 0.472 | 0.428; 0.516 |  |  |  |
| [22] 1+6,a | >4 yrs. | 127 | 0.496 | 0.452; 0.540 |  |  |  |

Upper number indicates scale used for the assessment of CHR criteria (1: SIPS; 2: CAARMS; 3: CAARMS 2006 version; 4: other scale; 5: BSABS; and 6: SPI-A)

Upper small letter indicates age group of sample (a: ADULT; b: MIX; c: YOUTH; and d: CAD)

F: according to fixed-effects model

\* *z* > 1.96: significant on 5% level; \*\* *z* > 2.58: significant on 1% level

# Because inclusion of extreme *Ei* values, i.e., 0 or 1, would cause an undue division by 0 in the calculation of $\overline{E}$ or $\overline{E^{\*}}$, 0 was replaced by 0.001 and 1 by 0.999 in their calculation.

# S.5. Supplementary Table 3

STable 3 Pairwise comparison of conversion rates at different follow-ups *tx* in samples meeting single UHR criteria (each irrespective of the potential presence of other CHR criteria) and in CHR-negative samples (one-dimensional 2 tests with *df* = 1)

|  |  |  |  |
| --- | --- | --- | --- |
| **Study** | **BLIPS** | **GRFD** | **CHR-negative** |
| **APS** | 6 mths.: 2 = 1.4931 yr.: 2 = 7.700 \*\*2 yrs.: 2 = 13.323 \*\*\*3 yrs.: 2 = 9.459 \*\*4 yrs.: no data>4 yrs.: no data | 6 mths.: 2 = 0.1621 yr.: 2 = 7.700 \*\*2 yrs.: 2 = 12.675 \*\*\*3 yrs.: 2 = 20.486 \*\*\*4 yrs.: no data>4 yrs.: no data | 6 mths.: 2 = 7.694 \*\*1 yr.: 2 = 7.493 \*\*2 yrs.: 2 = 17.102 \*\*\*3 yrs.: 2 = 4.933 \*4 yrs.: no data>4 yrs.: 2 = 1.016 § |
| **BLIPS** |  | 6 mths.: 2 = 2.5851 yr.: 2 = 02 yrs.: 2 = 41.678 \*\*\*3 yrs.: 2 = 47.092 \*\*\*4 yrs.: no data>4 yrs.: no data | 6 mths.: 2 = 13.294 \*\*\*1 yr.: 2 = 0.0802 yrs.: 2 = 44.083 \*\*\*3 yrs.: 2 = 25.570 \*\*\*4 yrs.: no data>4 yrs.: no data |
| **GRFD** |  |  | 6 mths.: 2 = 6.194 \*1 yr.: 2 = 0.0802 yrs.: 2 = 1.5213 yrs.: 2 = 7.482 \*\*4 yrs.: no data>4 yrs.: no data |

APS: attenuated psychotic symptoms criterion; BLIPS: transient psychotic symptoms criterion; GRFD: genetic risk and functional decline criterion

\* p < 0.05; \*\* p < 0.01; \*\*\* p < 0.001

§ both comparative APS samples are CAD samples

# S.6. Supplementary Table 4

STable 4 Pairwise comparison of conversion rates at different follow-ups *tx* in UHR samples assessed with different scales and, relatedly, according to different UHR criteria, and total sample (one-dimensional 2 tests with *df* = 1)

|  |  |  |  |
| --- | --- | --- | --- |
| **Study** | **SIPS** | **CAARMS early versions** | **CAARMS 2006 version** |
| **Total UHR sample** | 6 mths.: 2 = 0.2331 yr.: 2 = 0.5602 yrs.: 2 = 0.0023 yrs.: 2 = 0.0544 yrs.: 2 = 0.013>4 yrs.: 2 = 0.379 | 6 mths.: 2 = 0.0271 yr.: 2 < 0.0012 yrs.: 2 = 0.3703 yrs.: 2 = 0.0174 yrs.: 2 = 0.968>4 yrs.: 2 = 0.001 | 6 mths.: 2 = 0.0801 yr.: 2 = 0.5512 yrs.: 2 = 0.2213 yrs.: 2 = 2.3614 yrs.: 2 = 2.519>4 yrs.: no data |
| **CAARMS early versions** | 6 mths.: 2 = 0.1201 yr.: 2 = 0.5782 yrs.: 2 = 0.3143 yrs.: 2 = 0.0114 yrs.: 2 = 1.202>4 yrs.: 2 = 0.351 |  | 6 mths.: 2 = 0.0151 yr.: 2 = 0.5702 yrs.: 2 = 1.3093 yrs.: 2 = 2.769 °4 yrs.: 2 = 6.453 \*>4 yrs.: no data |
| **CAARMS 2006 version** | 6 mths.: 2 = 0.0511 yr.: 2 < 0.0012 yrs.: 2 = 0.3453 yrs.: 2 = 3.113 °4 yrs.: 2 = 2.178>4 yrs.: no data |  |  |

SIPS: Structured Interview for Psychosis-Risk Syndromes [53]

CAARMS early versions: Comprehensive Assessment for At-Risk Mental States, versions before 2006 versions [54]

CAARMS 2006 version: Comprehensive Assessment for At-Risk Mental States, 2006 version [55]

° p < 0.10; \* p < 0.05

# S.7. Supplementary Table 5

STable 5 Pairwise comparison of conversion rates at different follow-ups *tx* in UHR samples of different age groups and total sample (one-dimensional 2 tests with *df* = 1)

|  |  |  |  |
| --- | --- | --- | --- |
| **Study** | **CAD** | **YOUTH** | **ADULT** |
| **Total UHR sample** | 6 mths.: 2 = 3.003 °1 yr.: 2 = 1.2352 yrs.: 2 = 2.718 °3 yrs.: no data4 yrs.: no data>4 yrs.: 2 = 10.045 \*\* | 6 mths.: 2 = 0.7601 yr.: 2 = 0.9702 yrs.: 2 = 0.1293 yrs.: 2 = 0.5094 yrs.: 2 = 0.968>4 yrs.: 2 = 0.001 | 6 mths.: 2 = 0.3471 yr.: 2 = 0.2732 yrs.: 2 = 0.5493 yrs.: 2 = 0.1384 yrs.: 2 < 0.001>4 yrs.: 2 = 0.158 |
| **YOUTH** | 6 mths.: 2 = 6.447 \*1 yr.: 2 = 4.275 \*2 yrs.: 2 = 3.978 \*3 yrs.: no data4 yrs.: no data>4 yrs.: 2 = 9.838 \*\* |  | 6 mths.: 2 = 2.1481 yr.: 2 = 0.2162 yrs.: 2 = 0.1473 yrs.: 2 = 0.1174 yrs.: 2 = 0.914>4 yrs.: 2 = 0.187 |
| **ADULT** | 6 mths.: 2 = 1.3881 yr.: 2 = 2.6272 yrs.: 2 = 5.568 \*3 yrs.: no data4 yrs.: no data>4 yrs.: 2 = 12.526 \*\*\* |  |  |

CAD: almost entirely minors (≤18 years); YOUTH: ≥50% minors; ADULT: almost entirely adults

° p < 0.10; \* p < 0.05; \*\* p<0.01; \*\*\* p<0.001

# S.8. References of Supplementary Material

1. Eisend M. Metaanalyse. Meiring: Rainer Hampp Verlag. 2014.
2. Higgins J, Thompson SG, Deeks JJ, Altman DG. Measuring inconsistency in meta-analyses. BMJ. 2003;327(7414):557-60.
3. Koricheva J, Gurevitch J, Mengersen K (eds.). Handbook of meta-analysis in ecology and evolution. Princeton, NJ: Princeton University Press. 2013.
4. Nelson B, Yuen HP, Wood SJ, Lin A, Spiliotacopoulos D, Bruxner A, Broussard C, Simmons M, Foley DL, Brewer WJ, Francey SM, Amminger GP, Thompson A, McGorry PD, Yung AR. Long-term follow-up of a group at ultra high risk ("prodromal") for psychosis: the PACE 400 study. JAMA Psychiatry. 2013;70(8):793-802.
5. Nelson B, Yuen K, Yung AR. Ultra high risk (UHR) for psychosis criteria: are there different levels of risk for transition to psychosis? Schizophr Res. 2011;125(1):62-
6. Nelson B, Thompson A, Yung AR. Basic self-disturbance predicts psychosis onset in the ultra high risk for psychosis "prodromal" population. Schizophr Bull. 2012;38(6):1277-87.
7. Yung AR, Stanford C, Cosgrave E, Killackey E, Phillips L, Nelson B, McGorry PD. Testing the ultra high risk (prodromal) criteria for the prediction of psychosis in a clinical sample of young people. Schizophr Res. 2006;84(1):57-66.
8. Yung AR, Nelson B, Stanford C, Simmons MB, Cosgrave EM, Killackey E, Phillips LJ, Bechdolf A, Buckby J, McGorry PD. Validation of "prodromal" criteria to detect individuals at ultra high risk of psychosis: 2 year follow-up. Schizophr Res. 2008;105(1-3):10-7.
9. Bechdolf A, Thompson A, Nelson B, Cotton S, Simmons MB, Amminger GP, Leicester S, Francey SM, McNab C, Krstev H, Sidis A, McGorry PD, Yung AR. Experience of trauma and conversion to psychosis in an ultra-high-risk (prodromal) group. Acta Psychiatr Scand. 2010;121(5):377-84.
10. Mason O, Startup M, Halpin S, Schall U, Conrad A, Carr V. Risk factors for transition to first episode psychosis among individuals with 'at-risk mental states'. Schizophr Res. 2004;71(2-3):227-37.
11. Welsh P, Tiffin PA. The 'at-risk mental state' for psychosis in adolescents: clinical presentation, transition and remission. Child Psychiatry Hum Dev. 2014;45(1):90
12. Cannon TD, Cadenhead K, Cornblatt B, Woods SW, Addington J, Walker E, Seidman LJ, Perkins D, Tsuang M, McGlashan T, Heinssen R. Prediction of psychosis in youth at high clinical risk: a multisite longitudinal study in North America. Arch Gen Psychiatry. 2008;65(1):28-37.
13. Addington J, Cadenhead KS, Cannon TD, Cornblatt B, McGlashan TH, Perkins DO, Seidman LJ, Tsuang M, Walker EF, Woods SW, Heinssen R; North American Prodrome Longitudinal Study. North American Prodrome Longitudinal Study: a collaborative multisite approach to prodromal schizophrenia research. Schizophr Bull. 2007;33(3):665-72.
14. Schlosser DA, Jacobson S, Chen Q, Sugar CA, Niendam TA, Li G, Bearden CE, Cannon TD. Recovery from an at-risk state: clinical and functional outcomes of putatively prodromal youth who do not develop psychosis. Schizophr Bull. 2012;38(6):1225-33.
15. Carrión RE, McLaughlin D, Goldberg TE, Auther AM, Olsen RH, Olvet DM, Correll CU, Cornblatt BA. Prediction of functional outcome in individuals at clinical high risk for psychosis. JAMA Psychiatry. 2013;70(11):1133-42.
16. Woodberry KA, Seidman LJ, Giuliano AJ, Verdi MB, Cook WL, McFarlane WR. Neuropsychological profiles in individuals at clinical high risk for psychosis: relationship to psychosis and intelligence. Schizophr Res. 2010;123(2-3):188-98.
17. Addington J, Epstein I, Liu L, French P, Boydell KM, Zipursky RB. A randomized controlled trial of cognitive behavioral therapy for individuals at clinical high risk of psychosis. Schizophr Res. 2011;125(1):54-61.
18. Buchy L, Perkins D, Woods SW, Liu L, Addington J. Impact of substance use on conversion to psychosis in youth at clinical high risk of psychosis. Schizophr Res. 2014;156(2-3):277-80.
19. Kayser J, Tenke CE, Kroppmann CJ, Alschuler DM, Ben-David S, Fekri S, Bruder GE, Corcoran CM. Olfaction in the psychosis prodrome: electrophysiological and behavioral measures of odor detection. Int J Psychophysiol. 2013;90(2):190-206.
20. Klosterkötter J, Hellmich M, Steinmeyer EM, Schultze-Lutter F. Diagnosing schizophrenia in the initial prodromal phase. Arch Gen Psychiatry. 2001;58(2):158-64.
21. Schultze-Lutter F, Ruhrmann S, Klosterkötter J. In: Johannessen JO, Martindale B, Cullberg J, editors.? Evolving Psychosis. Different Stages, Different Treatments. London, New York: Routledge. 2006;104-123.
22. Schultze-Lutter F, Klosterkötter J, Ruhrmann S. Improving the clinical prediction of psychosis by combining ultra-high risk criteria and cognitive basic symptoms. Schizophr Res. 2014;154(1-3):100-6.
23. Bechdolf A, Wagner M, Ruhrmann S, Harrigan S, Putzfeld V, Pukrop R, Brockhaus-Dumke A, Berning J, Janssen B, Decker P, Bottlender R, Maurer K, Möller HJ, Gaebel W, Häfner H, Maier W, Klosterkötter J. Preventing progression to first-episode psychosis in early initial prodromal states. Br J Psychiatry. 2012;200(1):22-9.
24. Koutsouleris N, Meisenzahl EM, Davatzikos C, Bottlender R, Frodl T, Scheuerecker J, Schmitt G, Zetzsche T, Decker P, Reiser M, Möller HJ, Gaser C. Use of neuroanatomical pattern classification to identify subjects in at-risk mental states of psychosis and predict disease transition. Arch Gen Psychiatry. 2009;66(7):700-12.
25. Schultze-Lutter F, Klosterkötter J, Picker H, Steinmeyer EM, Ruhrmann S. Predicting first-episode psychosis by basic symptom criteria. Clin Neuropsychiatry. 2007;4(1):11-22.
26. Bodatsch M, Ruhrmann S, Wagner M, Müller R, Schultze-Lutter F, Frommann I, Brinkmeyer J, Gaebel W, Maier W, Klosterkötter J, Brockhaus-Dumke A. Prediction of psychosis by mismatch negativity. Biol Psychiatry. 2011;69(10):959-66.
27. Ruhrmann S, Bechdolf A, Kühn KU, Wagner M, Schultze-Lutter F, Janssen B, Maurer K, Häfner H, Gaebel W, Möller HJ, Maier W, Klosterkötter J; LIPS study group. Acute effects of treatment for prodromal symptoms for people putatively in a late initial prodromal state of psychosis. Br J Psychiatry. 2007;51(Suppl):88-95.
28. Fusar-Poli P, Byrne M, Badger S, Valmaggia LR, McGuire PK. Outreach and support in south London (OASIS), 2001-2011: ten years of early diagnosis and treatment for young individuals at high clinical risk for psychosis. Eur Psychiatry. 2013;28(5):315-26.
29. Morrison AP, French P, Walford L, Lewis SW, Kilcommons A, Green J, Parker S, Bentall RP. Cognitive therapy for the prevention of psychosis in people at ultra-high risk: randomised controlled trial. Br J Psychiatry. 2004;185:291-7.
30. Morrison AP, French P, Parker S, Roberts M, Stevens H, Bentall RP, Lewis SW. Three-year follow-up of a randomized controlled trial of cognitive therapy for the prevention of psychosis in people at ultrahigh risk. Schizophr Bull. 2007;33(3):682-7.
31. Morrison AP, Stewart SL, French P, Bentall RP, Birchwood M, Byrne R, Davies LM, Fowler D, Gumley AI, Jones PB, Lewis SW, Murray GK, Patterson P, Dunn G. Early detection and intervention evaluation for people at high-risk of psychosis-2 (EDIE-2): trial rationale, design and baseline characteristics. Early Interv Psychiatry. 2011;5(1):24-32.
32. Morrison AP, French P, Stewart SL, Birchwood M, Fowler D, Gumley AI, Jones PB, Bentall RP, Lewis SW, Murray GK, Patterson P, Brunet K, Conroy J, Parker S, Reilly T, Byrne R, Davies LM, Dunn G. Early detection and intervention evaluation for people at risk of psychosis: multisite randomised controlled trial. BMJ. 2012;344:e2233.
33. Ziermans TB, Schothorst PF, Sprong M, van Engeland H. Transition and remission in adolescents at ultra-high risk for psychosis. Schizophr Res. 2011;126(1-3):58-64.
34. Velthorst E, Derks EM, Schothorst P, Becker H, Durston S, Ziermans T, Nieman DH, de Haan L. Quantitative and qualitative symptomatic differences in individuals at Ultra-High Risk for psychosis and healthy controls. Psychiatry Res. 2013;210(2):432-7.
35. van der Gaag M, Nieman DH, Rietdijk J, Dragt S, Ising HK, Klaassen RM, Koeter M, Cuijpers P, Wunderink L, Linszen DH. Cognitive behavioral therapy for subjects at ultrahigh risk for developing psychosis: a randomized controlled clinical trial. Schizophr Bull. 2012;38(6):1180-8.
36. Manninen M, Lindgren M, Therman S, Huttunen M, Ebeling H, Moilanen I, Suvisaari J. Clinical high-risk state does not predict later psychosis in a delinquent adolescent population. Early Interv Psychiatry. 2014;8(1):87-90.
37. Lindgren M, Manninen M, Kalska H, Mustonen U, Laajasalo T, Moilanen K, Huttunen M, Cannon TD, Suvisaari J, Therman S. Predicting psychosis in a general adolescent psychiatric sample. Schizophr Res doi: 10.1016/j.schres.2014.06.028.
38. Riecher-Rössler A, Pflueger MO, Aston J, Borgwardt SJ, Brewer WJ, Gschwandtner U, Stieglitz RD. Efficacy of using cognitive status in predicting psychosis: a 7-year follow-up. Biol Psychiatry. 2009;66(11):1023-30.
39. Simon AE, Grädel M, Cattapan-Ludewig K, Gruber K, Ballinari P, Roth B, Umbricht D. Cognitive functioning in at-risk mental states for psychosis and 2-year clinical outcome. Schizophr Res. 2012;142(1-3):108-15.
40. Ruhrmann S, Schultze-Lutter F, Salokangas RK, Heinimaa M, Linszen D, Dingemans P, Birchwood M, Patterson P, Juckel G, Heinz A, Morrison A, Lewis S, von Reventlow HG, Klosterkötter J. Prediction of psychosis in adolescents and young adults at high risk: results from the prospective European prediction of psychosis study. Arch Gen Psychiatry. 2010;67(3):241-51.
41. Salokangas RK, Ruhrmann S, von Reventlow HG, Heinimaa M, Svirskis T, From T, Luutonen S, Juckel G, Linszen D, Dingemans P, Birchwood M, Patterson P, Schultze-Lutter F, Klosterkötter J; EPOS group. Axis I diagnoses and transition to psychosis in clinical high-risk patients EPOS project: prospective follow-up of 245 clinical high-risk outpatients in four countries. Schizophr Res. 2012;138(2-3):192-7.
42. Amminger GP, Schäfer MR, Papageorgiou K, Klier CM, Cotton SM, Harrigan SM, Mackinnon A, McGorry PD, Berger GE. Long-chain omega-3 fatty acids for indicated prevention of psychotic disorders: a randomized, placebo-controlled trial. Arch Gen Psychiatry. 2010;67(2):146-54.
43. Fusar-Poli P, Hobson R, Raduelli M, Balottin U. Reliability and validity of the Comprehensive Assessment of the At Risk Mental State, Italian version (CAARMS-I). Curr Pharm Des. 2012;18(4):386-91.
44. Lemos-Giráldez S, Vallina-Fernández O, Fernández-Iglesias P, Vallejo-Seco G, Fonseca-Pedrero E, Paíno-Piñeiro M, Sierra-Baigrie S, García-Pelayo P, Pedrejón-Molino C, Alonso-Bada S, Gutiérrez-Pérez A, Ortega-Ferrández JA. Symptomatic and functional outcome in youth at ultra-high risk for psychosis: a longitudinal study. Schizophr Res. 2009;115(2-3):121-9.
45. Kiss I, Kelemen O, Kéri S. Decreased peripheral expression of neuregulin 1 in high-risk individuals who later converted to psychosis. Schizophr Res. 2012;135(1-3):198-9.
46. Kotlicka-Antczak M, Pawełczyk T, Rabe-Jabłońska J, Pawełczyk A. PORT (Programme of Recognition and Therapy): the first Polish recognition and treatment programme for patients with an at-risk mental state. Early Interv Psychiatry doi: 10.1111/eip.12146.
47. Lam MM, Hung SF, Chen EY. Transition to psychosis: 6-month follow-up of a Chinese high-risk group in Hong Kong. Aust N Z J Psychiatry. 2006;40(5):414-20.
48. Lee J, Rekhi G, Mitter N, Bong YL, Kraus MS, Lam M, Rapisarda A, Lee TS, Subramaniam M, Chong SA, Keefe RS. The Longitudinal Youth at Risk Study (LYRIKS)--an Asian UHR perspective. Schizophr Res. 2013;151(1-3):279-83.
49. Katsura M, Ohmuro N, Obara C, Kikuchi T, Ito F, Miyakoshi T, Matsuoka H, Matsumoto K. A naturalistic longitudinal study of at-risk mental state with a 2.4year follow-up at a specialized clinic setting in Japan. Schizophr Res doi: 10.1016/j.schres.2014.06.013.
50. Koike S, Takano Y, Iwashiro N, Satomura Y, Suga M, Nagai T, Natsubori T, Tada M, Nishimura Y, Yamasaki S, Takizawa R, Yahata N, Araki T, Yamasue H, Kasai K. A multimodal approach to investigate biomarkers for psychosis in a clinical setting: the integrative neuroimaging studies in schizophrenia targeting for early intervention and prevention (IN-STEP) project. Schizophr Res. 2013;143(1):116-24.
51. Zhang T, Li H, Woodberry KA, Seidman LJ, Zheng L, Li H, Zhao S, Tang Y, Guo Q, Lu X, Zhuo K, Qian Z, Chow A, Li C, Jiang K, Xiao Z, Wang J. Prodromal psychosis detection in a counseling center population in China: an epidemiological and clinical study. Schizophr Res. 2014;152(2-3):391-9.
52. Kim E, Jang JH, Park HY, Shim G, Hwang JY, Kim SN, Kwon JS. Pharmacotherapy and clinical characteristics of ultra-high-risk for psychosis according to conversion status: a naturalistic observational study. Early Interv Psychiatry. 2012;6(1):30-7.
53. McGlashan T, Walsh B, Woods S. The Psychosis-Risk Syndrome. Handbook for Diagnosis and Follow-Up. New York, NY: Oxford University Press. 2010.
54. Yung AR, Yuen HP, McGorry PD, Phillips LJ, Kelly D, Dell'Olio M, Francey SM, Cosgrave EM, Killackey E, Stanford C, Godfrey K, Buckby J. Mapping the onset of psychosis: the Comprehensive Assessment of At-Risk Mental States. Aust N Z J Psychiatry. 2005;39(11-12):964-71.
55. Yung AR, Phillips LJ, Simmons MB, Ward J, Thompson P, French P, McGorry P. CAARMS. Comprehensive Assessment of at Risk Mental States. Parkville Victoria: The PACE Clinic, ORYGEN Research Centre, University of Melbourne, Department of Psychiatry. 2006.