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| EN# Author (Year) | Overall |
| EN#340  Collins (2009)  Subtle decline but improves | Chemo group: Subtle decline in mean scores of executive function and processing speed T1-T2, T1-T3; (Chemo+HT worse overall)  HT-only: Slight decline in mean scores of motor function from T1 to T2, but improved at T3 back to T1 level  Significant decline from T1 to T2 in visual and verbal working memory scores of chemo group compared to HT-only; no significant difference in change at T3  Significant increase from T1 to T3 in executive function scores of HT-only compared to chemo group |
| EN#2237  Bender (2006)  Decline, which may persist | No group difference at T2  No-chemo group: Significantly better mean cognitive scores than both chemo groups at T3  Chemo+HT: Decline in visual and verbal working memory scores from T1 to T3  Chemo alone: Decline in verbal working memory scores from T1 to T3 |
| EN#248   1. Fan (2005)   Subtle decline but improves | At baseline, chemo group had moderate-severe cognitive dysfunction (by the HSCS, *P* = .02 borderline when corrected for the four primary end points) compared to control. 2-year follow-up, the proportion of patients with moderate-severe cognitive impairment improved from 16% to 4%.  No significant difference in HSCS scores between patients who had hormonal treatment and those with ER-negative tumors who did not.  Results for the Trails A and Trails B tests (not a primary end point): Patients seemed to have poorer performance than controls on the Trails B test at 1 and 2 years of follow-up. |
| EN#2246  McDonald (2012)  Functional changes associated with CX | At baseline, patients with cancer showed increased bifrontal and decreased left parietal activation compared with controls. At every time point, the measurements varied compared to controls.  Task performance accuracy and reaction times did not differ between groups or over time for individual task conditions.  Repeated measures ANOVA showed the expected main effect of load (*P* < .001; performance was better for low load). The profile of the CTx+ group showed a non-significant (*P* = .16) decrease in high-load performance at M1 compared with baseline, with improved performance at Y1. Other groups did not show this outcome. |
| EN#2242  Wefel (2004)  Decline with improvement over time | The mean group performance on the WAIS-R Digit Symbol and the Booklet Category Test improved significantly relative to the mean baseline performance. WAIS-R Block Design, VSRT LTS, and NVSRT LTS test results suggested trends toward improved performance relative to baseline, but were not sig.  Within-subject analyses: T0 – T1, 61% of patients demonstrated a decline in cognitive function that exceeded the reliable change index (frequency of change in cognitive function from one assessment to the next. The index is derived from the SE of measurement of each test, and it represents the 90% CI for the difference in performance between two evaluations that is expected if no real change has occurred). 39% experienced declines in 1 measure, 11% in 2 measures, and 11% in 3 measures.  Significant declines in performance were most common for the WAIS-R Digit Span (22%), the WAIS-R Arithmetic (12%), the VSRT LTS (12%), and the Trail A (11%). 6% of patients exhibited declines on the WAIS-R Similarities, the VSRT Delayed Recall (DR), the NVSRT LTS, the NVSRT DR, and the Grooved Pegboard Test.  Of the patients who exhibited cognitive decline at T1, 45% had stable cognitive function, 45% exhibited improvement, and 10% had a mixed pattern of results (i.e., improvement on some tests and stabilization on others) at T2. |
| EN#405  Tager (2010)  Only motor changes | No difference between groups at baseline  *No changes in any cognitive domains over time*  Decline in motor performance by time in chemo group |
| EN#268  Jenkins (2006)  Not significant decline, improvement over time | *No group main effect or time-by-group interaction after controlling for age and IQ at baseline*  Reliable decline on ≥2 measures over time by percent of group (T2: chemo= 20%, control= 26%; T3: chemo= 18%, control= 14%)  Higher cognitive decline in chemo-induced menopause patients (OR=2.6) |
| EN#2247  Ahles (2010)  Age and pretx cognitive reserve are associated with posttx decline in processing speed.  Chemo has a short-term effect on verbal ability | Impact of age was investigated  Significant time effect on Processing Speed but not a group effect or a time-by-group interaction, which indicated that all groups improved during each assessment.  The older CX+ patients had lower post-treatment Processing Speed performance compared with healthy controls and CX-.  CX+ who had lower baseline WRAT-3 Reading scores had lower post-treatment Processing Speed performance compared with patients not exposed to chemotherapy and healthy controls. No sig difference between CX- and controls.  The older CX+ patients with lower baseline WRAT-3 Reading scores 🡪 decline in adjusted post-treatment scores, whereas most other groups improved.  Other cognitive domains 🡪 a significant group-by-time interaction for the Verbal Ability domain.  CX- and healthy controls 🡪 improved performance over time, CX+ 🡪 no improvement from T0 -T1, which was followed by improvement T2, T3.  Age was significantly related to performance on the Verbal Memory, Visual Memory, Working Memory, and Sorting domains, and WRAT-3 was significantly related to performance in the Distractibility domain. No significant main effects for group or interactions between time, age and/or WRAT-3 and treatment group.  Main effects for treatment were found for Processing Speed and Verbal Memory with a trend for the Verbal Ability. The patients treated with tamoxifen performed worse than healthy controls, whereas the performance of patients not treated with tamoxifen did not differ significantly from controls. In no instance did the patients treated and not treated with tamoxifen differ.  No main effects or interactions with baseline menopausal status or change in menopausal status.  Self-reported cognitive function:  The increase in cognitive symptoms from T0 was significantly greater for the CX+ group compared with the CX- group and healthy controls, which did not differ from each other. |