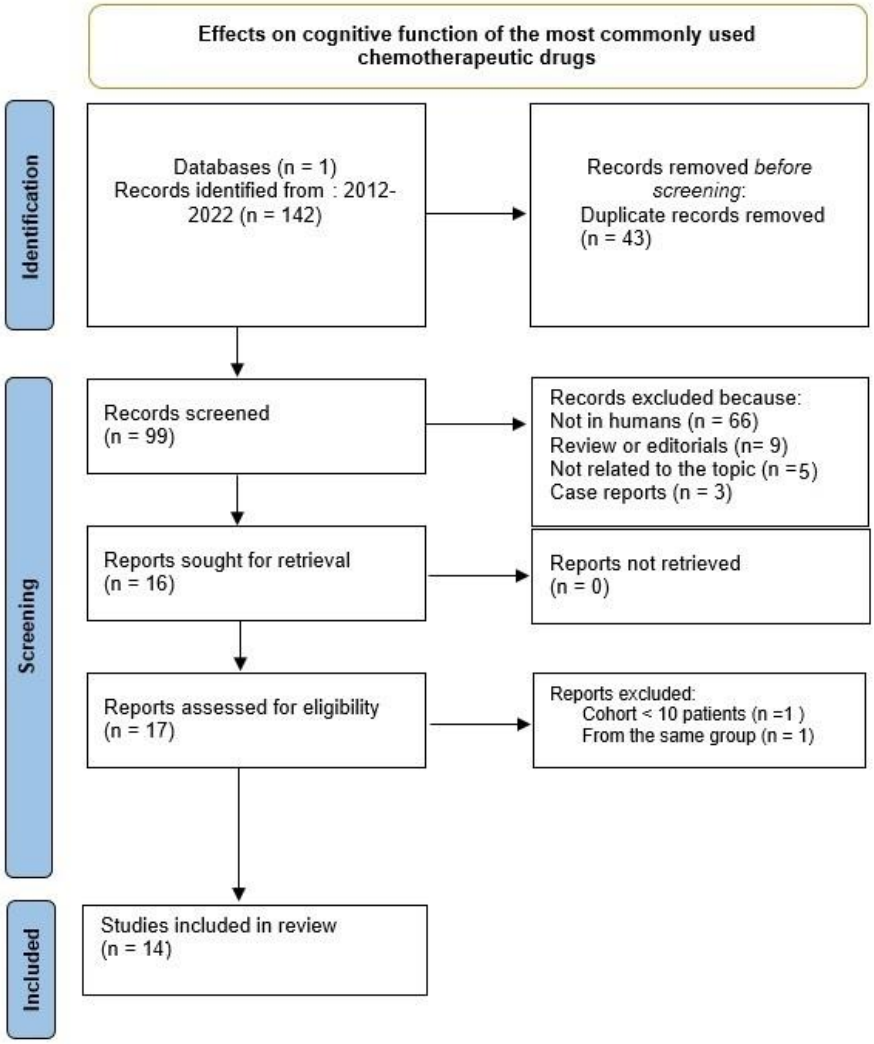
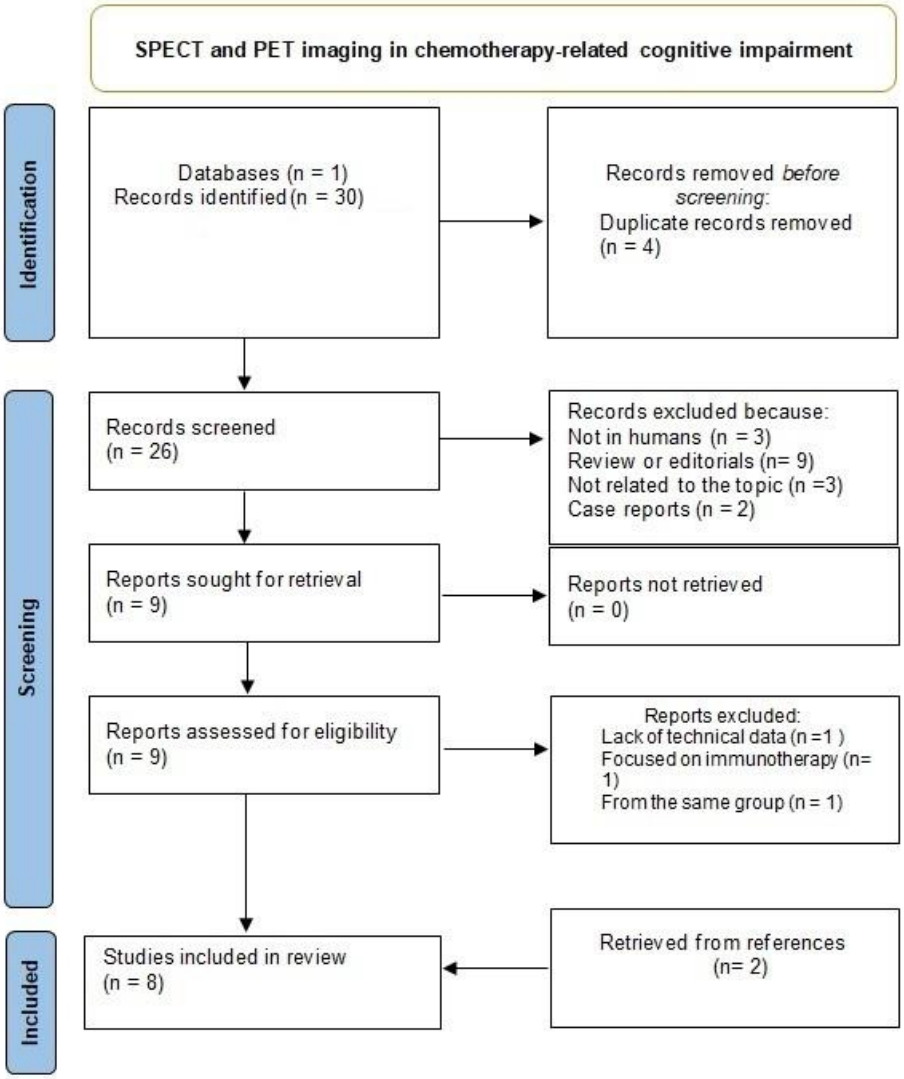
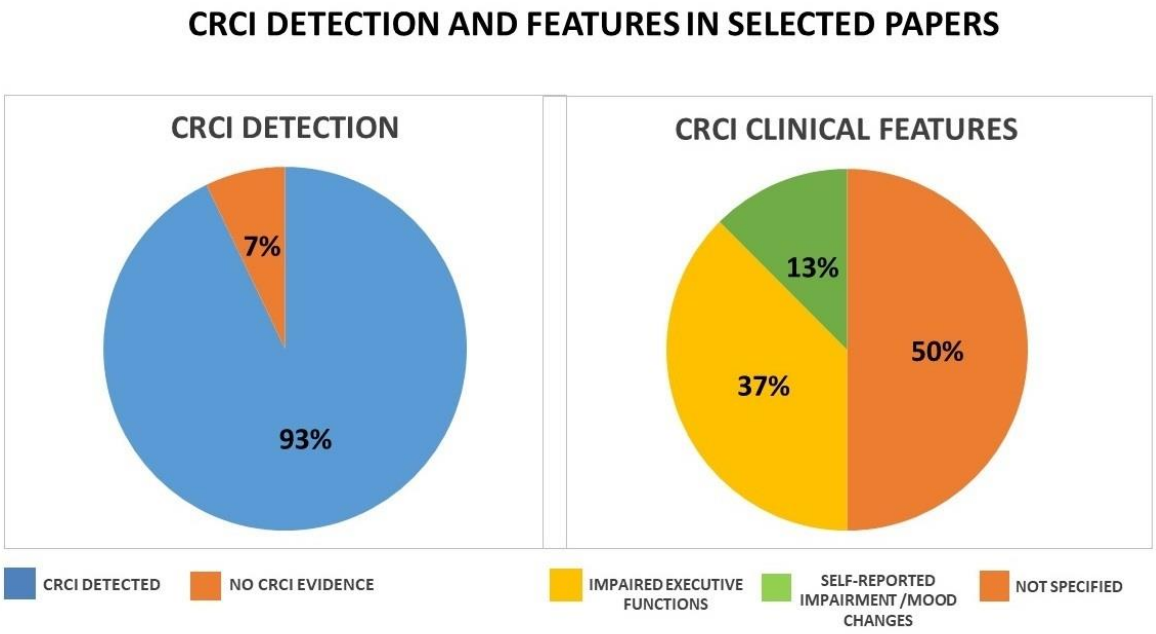
Supplemental Figure 1



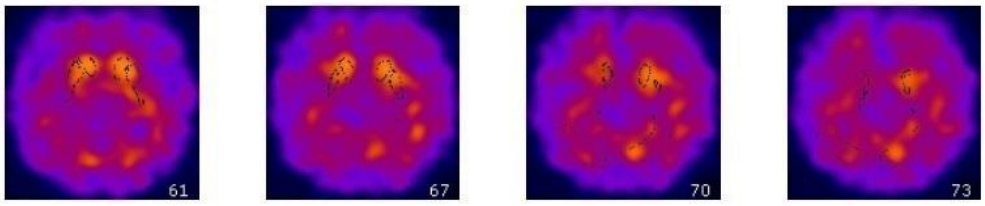
Supplemental Figure 2

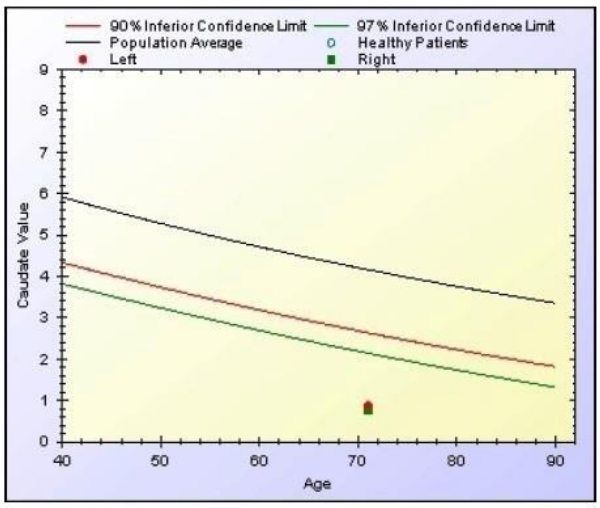


Supplemental Figure 3

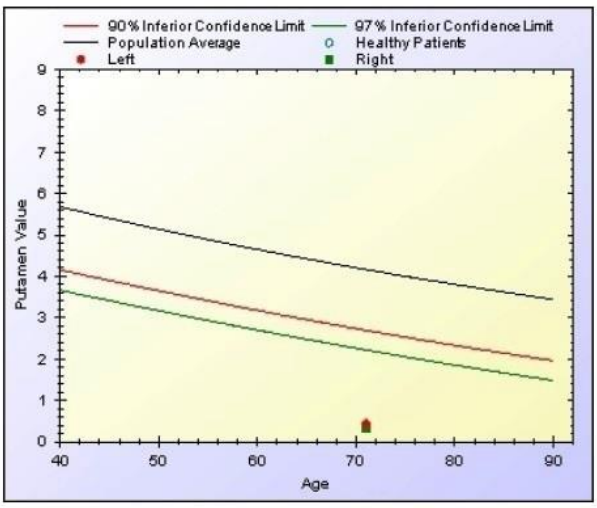


Supplemental Figure 4





Caudate: patient activity (left side in red, right side in green)



Putamen: patient activity (left side in red, right side in green)

SUPPLEMENTAL TABLE 1. Studies on Effects of Most Commonly Used Chemotherapeutic Drugs on Cognitive Function

Study	Year	Location	Study design	Cancer type	Sample	Chemotherapeutic drugs	CRCI assessment timing	Comments
Andreis et al. (*19*)	2013	Italy	Observational	Colorectal	57	Oxaliplatin, 5-fluorouracil, and leucovorin	Neuropsychologic battery at baseline, end of therapy, and 6 mo after chemotherapy	No cognitive impairment was seen, only some changes in emotional performance during chemotherapy
Khan et al. (*21*)	2016	India	Prospective cohort	Non-Hodgkin lymphoma	68	CHOP vs. R-CHOP	Neuropsychologic assessment performed after 1st, 2nd, 3rd, and 4th cycles	R-CHOP patients had more profound cognitive decline than patients who underwent CHOP alone
Lange et al. (*22*)	2016	France	Observational	Breast	123	Doxorubicin ± docetaxel	Evaluation before chemotherapy and after end of treatment	Chemotherapy (n= 58) and radiotherapy (n = 61) patients were compared with healthy controls (n = 61) for cognitive performance: 49% of radiotherapy and chemotherapy patients had cognitive decline after adjuvant therapy, with chemotherapy group having more subjective complaints
Miao et al. (*23*)	2016	China	Comparative	Breast	23	Docetaxel, doxorubicin, cyclophosphamide	Assessment at 36.6 ± 4.4 mo after chemotherapy	Functional connectivity (i.e., executive function) of anterior cingulate cortex was significantly lower in breast cancer group than in control group
Amidi et al. (*18*)	2017	Denmark and Netherlands	Observational	Testicular	64	Bleomycin, etoposide, and cisplatin	Neuropsychologic battery at 6 mo after chemotherapy	Twenty-two patients received surgery plus chemotherapy, whereas 42 underwent only surgery and were on active surveillance; chemotherapy patients experienced relevant CRCI
Cerulla et al. (*20*)	2017	Spain	Prospective, longitudinal	Breast	51	Fluorouracil, epirubicin, and cyclophosphamide with vs. without taxanes	Assessment at baseline, short-term and long-term	Short-term assessment showed cognitive decline (i.e., executive function) in both groups, with greater number of affected cognitive measures in taxane-group; long-term assessment confirmed cognitive impairment in both groups
Ehrhardt et al. (*24*)	2018	United States	Retrospective cohort	Non-Hodgkin lymphoma	187	Methotrexate, cytarabine, anthracyclines	Evaluation in long-term (>10 y) survivors	Survivors had impaired neurocognitive function, associated with low social attainment and poor quality of life, with respect to age-matched controls
Sales et al. (*25*)	2019	Brazil	Observational, prospective	Colorectal	85	Fluoropyrimidine	Assessment at baseline and after 12 mo	After 12 mo, executive function was lower in patients with adjuvant chemotherapy than in those without
van der Willik et al. (*30*)	2018	Netherlands	Cohort	Breast	166	Cyclophosphamide, methotrexate, and fluorouracil	Assessment at 20 y after chemotherapy	Survivors had lower cognitive performance and higher levels of inflammatory markers than nonchemotherapy matched controls; significant association existed between cognitive impairment and inflammatory biomarkers
Phillips et al. (*29*)	2020	United States	Cross-sectional	Acute lymphoblastic leukemia	176	Methotrexate	Evaluation at 2 y after diagnosis	Brain volume was not discrepant between acute survivors and controls, but cerebellar volume was reduced in survivors; at neuropsychologic assessment, executive function was impaired in female survivors
Wagner et al. (*31*)	2020	United States	Cohort	Breast	454	Docetaxel, cyclophosphamide, and anthracycline	Evaluation of self-reported cognitive impairment at baseline and every 3 mo	Chemotherapy plus endocrine therapy (n = 218) resulted in significant self-reported cognitive impairment compared with endrocrine therapy alone
Keetile et al. (*28*)	2021	South Africa	Randomized, time-based	Breast	30	Cyclophosphamide, methotrexate, and fluorouracil and fluorouracil, doxorubicin, and cyclophosphamide	Assessment at baseline, 3rd cycle, and 6th cycle (completion of chemotherapy)	Cognitive decline was significant from baseline to completion of chemotherapy
Beesley et al. (*26*)	2022	Australia	Prospective	Ovarian	726	At least 3 cycles of platinum	Assessment every 3 mo, starting 6 mo after diagnosis up to 4 y	Long-term moderate-to-severe fatigue (32%), trouble sleeping (31%), and anxiety (18%) were common
Durán-Gómez et al. (*27*)	2022	Spain	Observational, cross-sectional, nonprobability	Breast	180	Docetaxel, cyclophosphamide, and anthracycline	Assessment of newly diagnosed patients under chemotherapy	Cognitive impairment, significantly associated with chemotherapy exposure, was perceived in 41.7% of patients; near-infrared spectroscopy showed meaningfully lower oxygen saturation in frontal cortex of chemotherapy group (n = 90) than in no-chemotherapy group (n = 90)

R-CHOP = rituximab, cyclophosphamide, hydroxydaunomycin, vincristine sulfate, and prednisone.