

Supplementary Material 4: Physical Activity, Cognition, and Additional Measures Used in Included Articles

First Author (Year)	PA		Cognition			Additional				
	Self-Report ^a	Objective	Self-Report	Neuropsychological Testing	Neuroimaging	Descriptive	Psychosocial	Bio-physical	Health Behavior	Other Factors
<i>Observational Studies (n=26)</i>										
Barlow-Krelina (2020)	BRFSS, Unspecified PA question	-	CCSS-NCQ	-	-	X	X	X	X	-
Bedillion (2019)	IPAQ	-	FACT-Cog (PCA and PCI subscales)	-	-	X	X	X	-	-
Bender (2021)	-	Multi-sensor monitor (SenseWear Armband)	-	CANTAB (Rapid Visual Information Processing, Paired Associate Learning, Stockings of Cambridge, Spatial Working Memory), Digit Vigilance Test, Auditory Verbal Learning Test, Rivermead Story, Rey Complex Figure, GPT, Digit Symbol Substitution, D-KEFS (Color-Word Interference substest)	-	X	X	X	-	-
Cooke (2016)	-	Accelerometer (Actigraph GT3X+)	MMSE	-	MRI	X	-	X	-	-
Crowgey (2014)	LTEQ	-	-	CNS-VS	-	X	-	X	-	-
Ehlers (2017)	-	Accelerometer (Actigraph GT3X)	-	BrainBaseline Lab	-	X	X	X	-	-
Ehlers (2018)	-	Accelerometer (Actigraph GT3X)	-	BrainBaseline Lab	-	X	-	X	-	-
Fitzpatrick (2012)	Estimated using METs	-	MoCA, Healthy Brain Questionnaire	-	-	X	X	-	-	-
Gendron (2020)	MLTPAQ, TOQ	-	-	TMT, Verbal Fluency, WAIS/WISC-IV (DS, WM, & LNS substests), GPT	-	X	-	X	-	-
Hartman (2015)	GPAQ	-	-	Unspecified	-	X	-	X	X	-
Hocking (2013)	LTEQ	-	HCBI (cognitive competence subscale)	-	-	X	X	-	-	X
Hooke (2018)	LTEQ	-	PedsPCF	-	-	X	X	X	X	-
Huang (2017)	Estimated using METs (i.e., hours/week)	-	-	WMS (LM substest), Category Fluency Test, Stroop Test	-	X	X	X	-	-

Knowlton (2020)	Question on the average times per week (in mins) of cardiovascular activity and strength training	-	Open-ended symptom prevalence question	-	-	X	-	-	-	X
Mackenzie (2016)	-	Accelerometer (Actigraph GT3X)	-	N-Back Test	-	X	-	X	-	-
Marin-Chollom (2022)	PAR	-	-	NIH Toolbox	-	X	-	X	X	X
Marinac (2015)	-	Accelerometer (Actigraph GT3X+)	-	NeuroTrax Comprehensive Testing Suite	-	X	-	X	-	-
Mohammedi (2013)	IPAQ	-	EORTC-QLQ-C30 (cognitive functioning subscale)	-	-	X	X	-	X	-
Myers (2015)	Unspecified PA questions (i.e., type, frequency, and duration)	-	FACT-Cog, AFI, Questions on trouble with driving, comprehension, balance, coordination	-	-	X	X	X	X	-
Myers (2017)	Single item on exercise frequency (i.e., none, monthly, 2-3 times/week, 4-5 times/week, daily)	-	FACT-Cog (PCI subscale)	-	-	X	X	X	-	-
Peng (2021)	CUHK-PARCY	-	CBCL and ABCL (attention problems, thought problems, and sluggish cognitive tempo subscales)	CPT, Modified Taylor Complex Figure, TMT, GPT	-	X	X	-	-	-
Phillips (2017)	LTEQ	Accelerometer (Actigraph)	Frequency of Forgetting Questionnaire	-	-	X	X	-	-	X
Salerno (2021)	ACLS PA Questionnaire	-	FACT-Cog (PCI subscale and total score), WRAT	CANTAB	-	X	X	X	-	-
Tonorezos (2019)	Single item (i.e., <i>How many of the past 7 days did you exercise for at least 20 mins that made you sweat or breathe hard [e.g., dancing, jogging, basketball, etc.]?</i>)	-	CCSS-NCQ	-	-	X	X	X	X	-
vanVeen (2019)	SQUASH	-	EORTC-QLQ-C30 (cognitive functioning subscale)	-	-	X	X	X	X	-

Williams (2022)	BRFSS, Unspecified PA question	-	NCQ	-	-	X	X	-	X	-
<i>(Quasi-)Experimental Studies (n=71)</i>										
Arneil (2019)	IPAQ	-	FACT-Cog	-	-	X	-	-	-	-
Backman (2014)	Study-specific questions rated on a 6-level scale (i.e., frequency of walking/cycling, training [gym, aerobics], housework at home; daily PA level), PA log	Pedometer (Silva Ex Connect)	EORTC-QLQ-C30 (cognitive functioning subscale)	-	-	X	X	X	X	-
Bade (2021)	MAQ	Accelerometer (FitBit Flex2)	EORTC-QLQ-C30 (cognitive functioning subscale)	-	-	X	X	X	X	-
Baumann (2010)	Visual analogue scale for sport (i.e., never, performed to regular high-performance)	-	EORTC-QLQ-C30 (cognitive functioning subscale)	-	-	X	X	X	-	-
Benzing (2020)	BSA-F, PA log	-	BRIEF	Block Recall Test, D-KEFS (Color-Word Interference subtest), KABC-II NU (Test of Nonverbal Intelligence, Number Recall, Word Order, Rover, Atlantis & Atlantis recall subtests), WISC-IV (Cancellation, Coding, & Symbol Search subtests)	-	X	X	X	-	X
Bryant (2017)	-	-	EORTC-QLQ-C30 (cognitive functioning subscale)	-	-	X	X	X	-	-
Buffart (2015)	LTEQ, PA log	Pedometer (Yamax Digiwalker SW200)	EORTC-QLQ-C30 (cognitive functioning subscale)	-	-	X	X	X	-	-
Campbell (2018)	-	HR monitor (Polar)	FACT-Cog	HVLT, TMT, COWA, Animal Naming Test, Stroop Test	fMRI	X	X	X	-	-
Cantarero-Villanueva (2013)	Unspecified (question(s) on mins of PA/day)	-	PFS (cognitive/mood subscale), POMS (confusion subscale)	-	-	X	X	X	-	-
Cox (2020)	-	HR monitor (Unspecified)	-	Visual-motor Go Task, Visual-motor Go/No-Go Task	MEG	X	X	X	-	X

Culos-Reed (2006)	LTEQ	-	EORTC-QLQ-C30 (cognitive functioning subscale), POMS (confusion subscale), SOSI (cognitive disorganization subscale)	-	-	X	X	X	-	-
Derry (2015)	CHAMPS	-	BCPT Symptom Checklist (cognitive problems subscale)	-	-	X	X	X	X	-
Dimeo (2004)	-	HR monitor (Unspecified)	EORTC-QLQ-C30 (cognitive functioning subscale)	-	-	X	X	X	-	-
Fazzino (2017)	PA log	Accelerometer (Actigraph GT3X+)	BCPT Symptom Checklist (cognitive problems subscale)	-	-	X	X	X	-	-
Fontana (2021)	-	-	BRIEF	CPT, WISC-IV (DS, LNS, Coding, & Symbols subtests), WISC-III (Mazes subtest) Verbal & Figurative Fluency Tests, Stroop Test, TMT	-	X	X	X	-	-
Galantino (2008)	-	-	PCQ	CogState Battery	-	X	X	X	-	X
Galantino (2012)	-	-	PCQ	CogState Battery	-	X	X	X	-	-
Galiano-Castillo (2016)	-	-	EORTC-QLQ-C30 (cognitive functioning subscale)	-	-	X	X	X	-	-
Galiano-Castillo (2017)	-	-	-	ACT, TMT	-	X	-	X	-	-
Galveo (2010)	-	-	EORTC-QLQ-C30 (cognitive functioning subscale)	-	-	X	X	X	X	X
Gehring (2020)	IPAQ, PA log	HR monitor (Polar RC3 GPS or Polar RCX5)	MOS (cognitive function subscale), CFQ	Stroop Test, Letter Digit Substitution Test, WAIS (DS subtest), Test of Everyday Attention, Visual Verbal Learning Test, WMS-III (Verbal Paired Associates subtest), Concept Shifting Test, GIT Letter and Category Fluency	-	X	X	X	X	-
Gokal (2016)	GPPAQ, PA log	Pedometer (Yamax Digi-Walker SW-200)	POMS (confusion subscale)	-	-	X	X	X	-	-

Gokal (2018)	GPPAQ, PA log	Accelerometer (Actigraph GT3X+), pedometer (Yamax Digi-Walker SW-200)	CFQ	Stroop Test WAIS-IV (DS, BD subtests), SART	-	X	X	X	-	-
Hacker (2011)	PA log	Accelerometer (Actiwatch-Score)	EORTC-QLQ-C30 (cognitive functioning subscale)	-	-	X	X	X	-	-
Hartman (2018)	-	Accelerometer (Actigraph GT3X+)	PROMIS (applied cognition-abilities and general concerns subscales)	NIH Toolbox	-	X	X	X	-	-
Hartman (2019)	-	Accelerometer (Actigraph GT3X+)	PROMIS (applied cognition-abilities and general concerns subscales)	NIH Toolbox	-	X	X	X	-	-
Henke (2014)	-	HR monitor (Polar FT7)	EORTC-QLQ-C30 (cognitive functioning subscale)	-	-	-	X	X	X	-
Howell (2018)	-	Accelerometer (wGT3X-BT; ActiGraph)	WASI	D-KEFS	-	X	X	X	-	-
Janelins (2016)	-	-	MDASI (Difficulty remembering item)	-	-	X	-	-	X	-
Knoerl (2022)	PAR, PA log	Pedometer (Unspecified)	EORTC-QLQ-C30 (cognitive functioning subscale)	-	-	X	X	X	-	-
Knols (2011)	IPAQ, PA log	Accelerometer (Step Activity Monitor 3)	EORTC-QLQ-C30 (cognitive functioning subscale)	-	-	X	X	X	-	-
Korstjens (2011)	PA log	HR monitor (Unspecified)	SPSI	-	-	X	X	X	-	-
Lambert (2021)	LTEQ	HR monitor (Polar A300)	-	-	fMRI	X	-	-	-	-
Larkey (2016)	BPAQ, PA log	-	FACT-Cog (PCI and QoL subscales)	WAIS-III (DS & LNS subtests)	-	X	X	-	-	X
Leach (2015)	PA log	HR monitor (Unspecified)	FACT-Cog	-	-	X	X	X	-	-
Leach (2016)	PA log	HR monitor (Unspecified)	FACT-Cog	-	-	X	X	X	-	-
Livingston (2015)	LTEQ	Accelerometer (Actigraph GT1M)	EORTC-QLQ-C30 (cognitive functioning subscale)	-	-	X	X	X	-	-
Mijwel (2018)	-	Accelerometer (Actigraph GT3X)	EORTC-QLQ-C30 (cognitive functioning subscale), PFS (cognitive/mood subscale)	-	-	X	X	X	X	-
Miki (2014)	-	-	-	FAB	-	X	X	-	X	-

Morielli (2021)	-	-	EORTC-QLQ-C30 (cognitive functioning subscale)	-	-	X	X	X	-	X
Myers (2019)	WHI PAQ, PA log	-	FACT-Cog (PCA, PCI, and QoL subscales), PROMIS (applied-cognition-abilities subscale)	RAVLT, TMT, F-A-S Test of Verbal Fluency	-	X	X	X	X	-
Northey (2019)	-	HR monitor (Polar FT40)	-	CogState Oncology Battery	-	X	-	X	-	-
Nusca (2021)	-	HR monitor (Unspecified)	EORTC-QLQ-C30 (cognitive functioning subscale)	-	-	X	X	X	X	-
Oechsle (2014)	-	-	EORTC-QLQ-C30 (cognitive functioning subscale), MFIS (cognitive subscale)	-	-	X	X	X	-	-
Oh (2010)	PA log	-	POMS (confusion subscale)	-	-	X	X	X	-	-
Oh (2012)	PA log	-	FACT-Cog, EORTC-QLQ-C30 (cognitive functioning subscale)	-	-	X	X	X	-	-
Park (2021)	PA log	-	EORTC-QLQ-C30 (cognitive functioning subscale)	-	-	X	X	X	-	-
Pasyar (2019)	PA log	-	EORTC-QLQ-C30 (cognitive functioning subscale)	-	-	X	X	X	-	-
Peterson (2018)	-	-	-	BCOG, WAIS- IV (LNS, Coding, & BD subtests), TMT, WMS- IV (LM-I & LM-II subtests), COWAT	-	X	-	X	-	-
Peterson (2020)	-	-	-	BCOG, WAIS-IV (LNS, Coding, & BD subtests), TMT, WMS- IV (LM-I, LM-II and DR), COWAT	MRI	X	X	X	-	-
Poier (2018)	PA log	-	EORTC-QLQ-C30 (cognitive functioning subscale)	-	-	X	X	-	-	X
Reid-Arndt (2012)	-	-	MASQ	RAVLT, TMT, Stroop Test, COWAT, WAIS-III (DS & Digit Symbol subtests)	-	X	X	X	-	-
Riggs (2017)	-	HR monitor (Unspecified)	-	CANTAB	MRI	X	-	X	-	-
Rogers (2009)	PA log	Accelerometer (Actigraph GT1M)	FACT-Cog	-	-	X	X	X	X	X

Rosero (2020)	PA log	HR monitor (A2 Polar Electro)	MMSE, EORTC-QLQ-C30 (cognitive functioning subscale)	TMT A	-	X	X	X	X	-
Saarto (2012)	PA log	-	EORTC-QLQ-C30 (cognitive functioning subscale)	-	-	X	X	X	X	-
Sabel (2017)	-	Multi-sensor monitor (SenseWear Armband Pro2)	-	WISC-IV (DS, Similarities, BD, & Coding subtests), CPT, Map Mission Test, Visual Scanning, D-KEFS, ACT, RAVLT, WNV, Rey Complex Figure Test, COWAT, TMT, Stroop Test	-	X	-	X	X	-
Salerno (2019)	-	Accelerometer (Actigraph GT3X)	-	Letter Comparison Task Spatial Memory Task	-	X	-	X	-	-
Salerno (2020)	-	-	-	Flanker Task, Spatial WM Test, Task Switching Test, Letter Comparison Test	-	X	-	X	-	-
Schmidt, M (2015)	-	-	EORTC-QLQ-C30 (cognitive functioning subscale), FAQ (cognitive subscale)	TMT	-	X	X	X	-	-
Schmidt, T (2015)	-	-	EORTC-QLQ-C30 (cognitive functioning subscale)	D2 Test of Attention	-	X	X	X	-	-
Schwartz (2002)	PA log	-	-	TMT	-	X	X	X	-	X
Spreafico (2021)	Study-specific questions	-	PedsQL-MFS (cognitive fatigue subscale)	-	-	X	X	-	-	-
Steindorf (2014)	Unspecified PA question	-	EORTC-QLQ-C30 (cognitive functioning subscale), FAQ (cognitive subscale)	TMT	-	X	X	X	X	-
Trinh (2021)	-	Accelerometer (Actigraph GTX3+)	FACT-Cog	NIH Toolbox	-	X	X	X	X	-
Vadiraja (2009)	-	-	EORTC-QLQ-C30 (cognitive functioning subscale)	-	-	X	X	-	-	-
Van Weert (2010)	-	-	MFI (mental fatigue subscale)	-	-	X	X	X	-	-
Vaquero (2020)	Active-Q Questionnaire	Pedometer (Unspecified)	-	WAIS-III (Vocabulary subtest), RAVLT, ROCF (Copy & DR), TMT	MRI	X	X	X	-	-

Wiskemann (2011)	PA log	-	EORTC-QLQ-C30 (cognitive functioning subscale), MFI (mental fatigue subscale)	-	-	X	X	X	-	-
Wurz (2021)	LTEQ	-	-	NIH Toolbox	fMRI	X	-	-	-	-
Zimmer (2018)	-	Multi sensor accelerometer (SenseWear Armband Pro3)	EORTC-QLQ-C30 (cognitive functioning subscale), MFI (mental fatigue subscale)	-	-	X	X	X	-	-

Notes. ABCL=Adult Behavior Checklist; ACLS=Aerobics Center Longitudinal Study; ACT=Auditory Consonant Trigrams; AFI=Attentional Function Index; BCOG=Brief Cognitive Screener; BCPT=Breast Cancer Prevention Trial; BD=Block Design; BPAQ=Brief Physical Activity Questionnaire; BRFS=Behavioral Risk Factor Surveillance System; BRIEF=Behavior Rating Inventory of Executive Function; BSA-F=Physical Activity, Exercise, and Sport Questionnaire (*Bewegungs- und Sportaktivität Fragebogen*); CANTAB=Cambridge Neuropsychological Test Automated Battery; CBCL=Child Behavior Checklist; CCSS-NCQ=Childhood Cancer Survivor Study Neurocognitive Questionnaire; CFQ=Cognitive Failure Questionnaire; CHAMPS=Community Healthy Activities Model Program for Seniors; CNS-VS=Central Nervous System-Vital Signs; COWAT=Controlled Oral Word Association Test; CPT=Continuous Performance Test; CUHK-PARCY=Chinese University of Hong Kong: Physical Activity Rating for Children and Youth; D-KEFS=Delis-Kaplan Executive Function System; DR=delayed recall; DS=Digit Span; EORTC QLQ-C30=European Organization for Research and Treatment of Cancer Quality of Life Questionnaire-Core 30; FAB=Frontal Assessment Battery; FACT-Cog=Functional Assessment of Cancer Therapy—Cognitive Function; FAQ=Fatigue Assessment Questionnaire; fMRI=functional magnetic resonance imaging; GPAQ=Global Physical Activity Questionnaire; GPPAQ=General Practice Physical Activity Questionnaire; GPT=Grooved Pegboard Test; HCBI=Health Competence Beliefs Inventory; HR=heart rate; HVL=Hopkins Verbal Learning Test; IPAQ=International Physical Activity Questionnaire; KABC NU=Kaufman Assessment Battery for Children; LM=logical memory; LNS=Letter Number Sequencing Test; LTEQ=Leisure Time Exercise Questionnaire; MAQ=Modifiable Activity Questionnaire; MASQ=Multiple Abilities Self-Report Questionnaire; MDASI=MD Anderson Symptom Inventory; MEG=magnetoencephalography; MET=metabolic equivalent; MFI=Multidimensional Fatigue Inventory; MFIS=Modified Fatigue Impact Scale; MLTPAQ=Minnesota Leisure Time Physical Activity Questionnaire; MMSE=Mini-Mental Status Exam; MoCA=The Montreal Cognitive Assessment; MOS=Medical Outcomes Study; MRI=magnetic resonance imaging; NCQ=Neurocognitive Questionnaire; NIH=National Institutes of Health; PA=physical activity; PAR=Physical Activity Recall; PCA=Perceived Cognitive Abilities; PCI=Perceived Cognitive Impairment; PCQ=Perceived Cognition Questionnaire; PedsPCF=Parent-Perceived Child Cognitive Function; PedsQL-MFS=Pediatric Quality of Life Inventory Multidimensional Fatigue Scale; PFS=Piper Fatigue Scale; POMS=Profile of Mood States; PROMIS=Patient-Reported Outcome Measurement Information System; QoL=quality of life; RAVLT=Rey Auditory Verbal Learning Test; ROCF=Rey-Osterreith Complex Figure Test; SART=Sustained Attention to Response Task; SOSI=Symptoms of Stress Inventory; SPSI=Social Problem-Solving Inventory; SQUASH=Short Questionnaire to Assess Health-Enhancing Physical Activity; TMT=Trailmaking Test; TOQ=Teecomseh Self-Administered Occupational Physical Activity Questionnaire; WAIS=Wechsler Adult Intelligence Scale; WASI=Wechsler Abbreviated Scale of Intelligence; WHI PAQ=Women's Health Initiative Brief Physical Activity Questionnaire; WISC=Wechsler Intelligence Scale for Children; WM=working memory; WMS=Wechsler Memory Scale; WNV=Wechsler Nonverbal Scale of Ability, WRAT=Wide Range Achievement Test

^aInstances where trainers/intervention facilitators tracked participants' adherence/attendance to PA sessions are not captured herein.

Article Title: A scoping review of studies exploring physical activity and cognition among persons with cancer

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