LIFESTYLE AND AGING AND ALZHEIMER'S DISEASE IN DOWN SYNDROME

Physical Activity and Aging in Down syndrome

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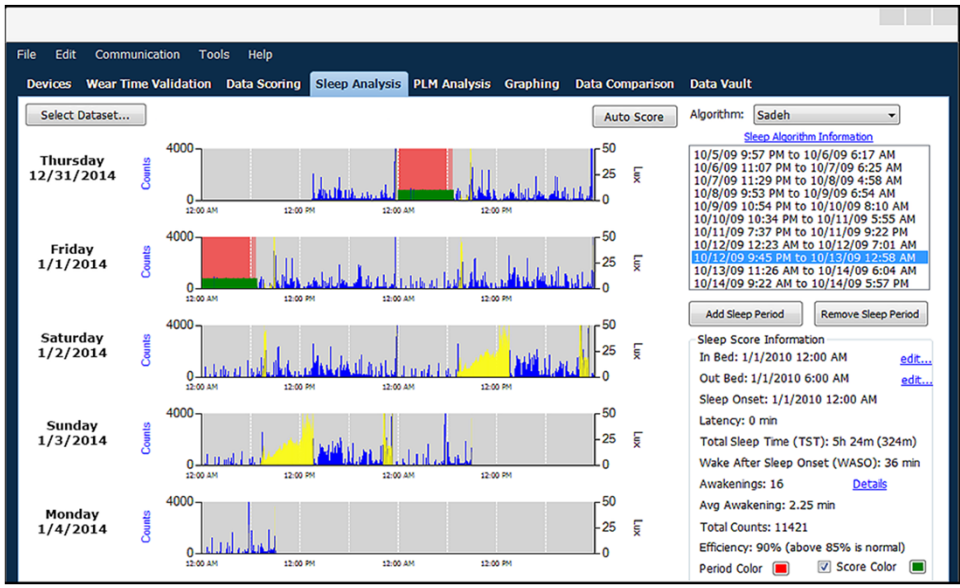
Physical Activity and Aging in Down syndrome

- Adults with DS experience accelerated aging:
  - skin (e.g., premature wrinkling)
  - vision (e.g., strabismus and refraction problems and cataracts)
  - menopause in women with DS.
  - Alzheimer's disease
  - Hypothyrodism
  - Musculosketal problems
  - Sleep apnea
  - Obesity
- Physical activity is key part of promoting successful aging in general population. Given trisomy 21 and underlying neurobiological differences, it is not clear to what extent physical activity should be prioritized as a key prevention or intervention strategy to promote successful aging.
- We do know that, on average, adults with DS are at risk for engaging in very low rates of physical activity

Physical Activity in Every Day Life

	Time	High = work up a sweat and heart beats fast Moderate = not exhausting but involves more than low effort Low = moving around but at an easy, slow level.		
Exercise (jog, bike, swim, walking)		High	Moderate	Low
Weight lift, strength, Calisthenics		High	Moderate	Low
Flexibility (yoga, stretching, tai chi)		High	Moderate	Low

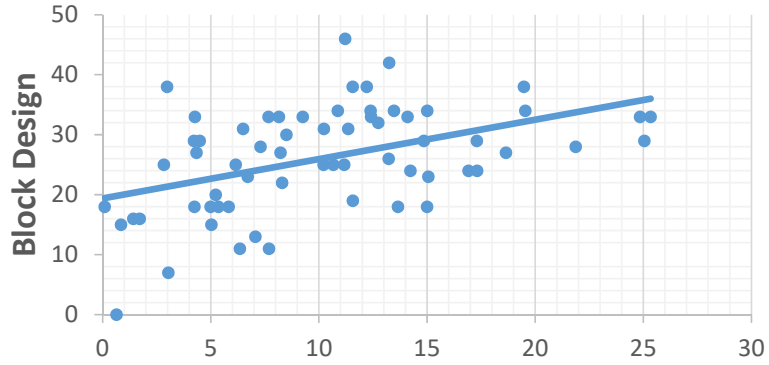
N = 69 currently
N = 140 over next 5 yrs

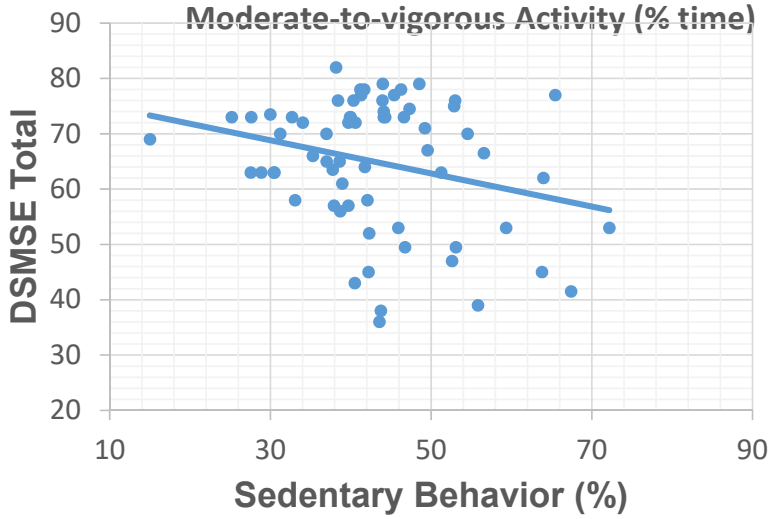


Physical Activity and Cognitive Functioning

		Sedentary (%/day) Partial r	Moderate (%/day) Partial r
Executive Functions	Cat Dog Stroop	.263*	-.240
Memory	Cued Recall		
	Intrusions	.265*	-.237
Visuospatial Ability	VMI	-.205	.338**
	Block design	-.212	.371**
Motor Control	Purdue pegboard	-.033	.317*
Dementia symptoms	DSMSE	-.288*	.286*
	DLD social	.376**	-.211
	DLD cognitive	.446**	-.368**

**.p <.01, *.p <.05. Adjusted for include: age, sex, site, and premorbid level of intellectual disability.





Physical Activity and Health

	Sedentary (% /day) Partial r	Moderate (% /day) Partial r
Cardiovascular Conditions	-.081	-.018
Sleep Apnea	-.351**	.424**
Musculoskeletal Conditions	-.193	.028
Endocrine Conditions	.122	-.277*
BMI	.108	-.140
# Mental Health Conditions	.253*	-.249*

**.p ≤.01, *.p <.05

Adjusted for age, sex, and data collection site.

59% BMI in obese range
66% endocrine condition
25% musculoskeletal condition
60% sleep apnea
62% cardiovascular condition

Implications

- Promoting low sedentary behavior and high moderate-to-vigorous activity may be an important way to promote healthy aging in adults with DS.
- Modifiable lifestyle factor
- If findings are confirmed in future longitudinal studies, findings have critical implications for social policies and interventions.
- Over the next five years, we will be learning more about role of physical activity as well as other lifestyle factors (sleep, cognitive stimulation, and social engagement) in Alzheimer's disease and other aging outcomes