

People with Down syndrome often have declines in their memory, processing speed and other cognitive skills in their late 30s, 40s and 50s. These declines are related to their risk for early-onset Alzheimer's disease (Mann and Esiri, 1989; Wiseman et al., 2015).

Lifestyle factors – the things that we do in our daily lives – have been shown to promote healthy brain aging in people without Down syndrome and may be a way to help maintain memory, processing speed and cognitive functioning in adults with Down syndrome. One such lifestyle factor is **employment activities**. We are using this term to refer to activities that are part of paid jobs, volunteer positions, vocational training or work centers.

The benefit of employment for memory and cognition is related to cognitive reserve (Stern, 2006). Cognitive reserve is the idea that doing activities that make you problem-solve or think in new and flexible ways improves brain functioning and can help people be resilient to brain changes that occur with aging and with Alzheimer's disease.

## Employment

Historically, people with Down syndrome have had few employment opportunities. Sheltered workshops involving assembly or sorting work were often the only options (Browder and Cooper, 1994; Pruchno and McMullen, 2004). More recently, employment for adults with disabilities has changed and involved community jobs and vocational training options, providing pathways for more complex work. College programs have also been created for people with intellectual disabilities (Lee, Day, Carter, & Taylor, 2021).

A recent study by researchers from the Alzheimer Biomarker Consortium-Down syndrome (ABC-DS) examined whether employment activities were related to changes in the memory and

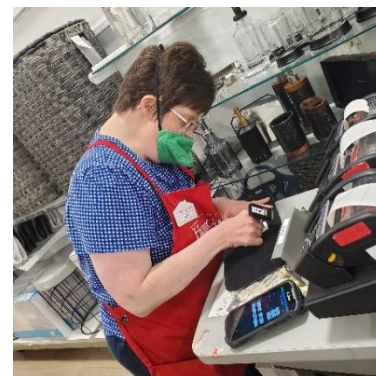
cognitive functioning of adults with Down syndrome across 1.5 to 2 years. The study included 87 adults with Down syndrome aged 25-56 years-old.

Below is a list of some of the employment activities that were done by the adults with Down syndrome in the study.

blogger-speaker bracelet-maker assistant  
walmart-greeter storeclerk  
garment-sorter library-aid  
office-work  
hostess assembly boxfolder  
janitor warehouse-worker  
shredder dishwasher fastfood-server  
bakery-helper  
grocery-bagger stocker nursery-school  
college

Most of the adults with Down syndrome were involved in paid employment in the community (68%). Others were involved in employment activities through work centers or vocational training centers (26%). Two adults were part of a college program and were working on earning a certificate.

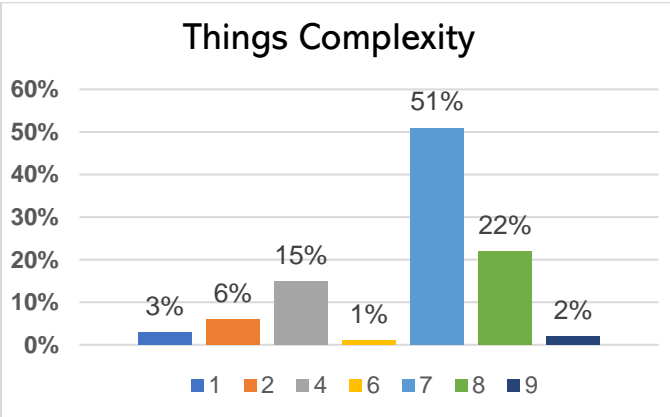
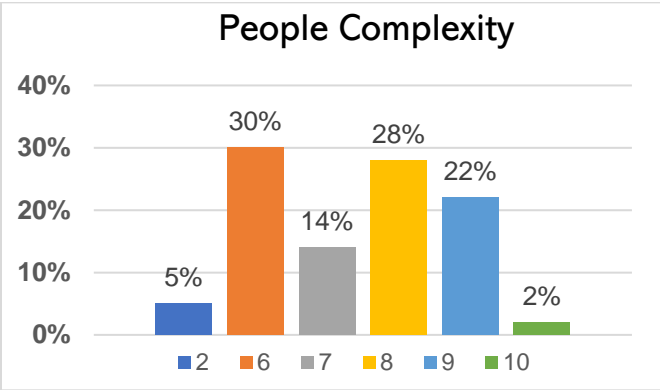
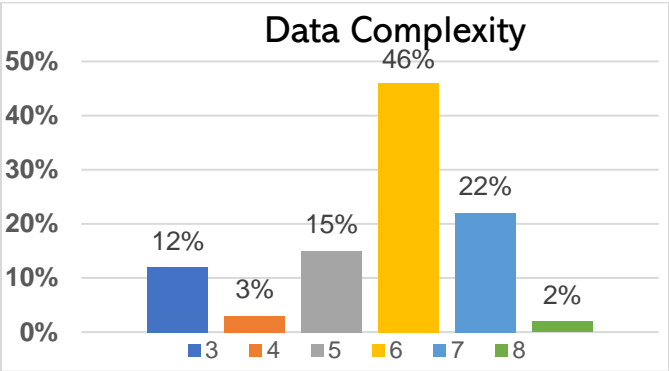
About half of the adults (51%) spent  $\geq 20$  hours a week in employment activities.



Some jobs had high **Data Complexity**, defined as using information or knowledge to do tasks. For example, being a Librarian Aid involved using a number and letter system to shelve books.

Other jobs had high **People Complexity**, defined as interacting with others and/or instructing others. For example, being a Restaurant Hostess required talking with restaurant staff and customers. Other jobs were high in **Things Complexity**, defined as using or altering objects such as assembling, shredding, and sorting work.

The bar graphs below show the range in the **Data**, **People**, and **Things Complexity** scores.



Adults with Down syndrome in more complex **People** and **Things** activities had less memory

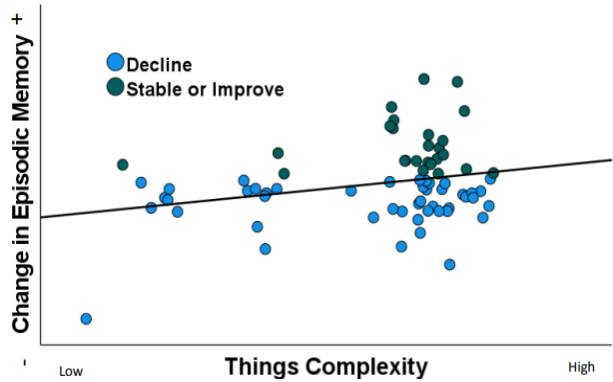
decline and fewer new dementia symptoms across the 1.5-2 years than did those with no employment activities or less complex work.

	Change in Memory	Change in Dementia Symptoms		
	Cued Recall	DSMSE	DLD Sum of Social	DLD Sum of Cognitive
Data Complexity	r=-.007 p=.953	r=.080 p=.518	r=-.100 p=.419	r=-.117 p=.345
People Complexity	r=.023 p=.853	r=.237 p=.053	r=-.262 p=.032	r=-.228 p=.064
Things Complexity	r=.280 p=.022	r=.263 p=.032	r=-.242 p=.049	r=-.137 p=.271

DSMSE = Down Syndrome Mental Status Exam. DLD = Dementia Questionnaire for People with Learning Disabilities. Controlled for age and intellectual level. Red = significant associations.

This was true even after considering differences in intellectual level, age, and hours worked.

For example, as shown below, adults with involved in higher **Things Complexity** activities were more likely to have stable or improved memory across time compared to adults involved in lower **Things Complexity** activities.



Summary

Employment activities (paid or volunteer) may promote healthy cognitive aging in people with Down syndrome. Activities that include assembling, moving, cleaning, and organizing objects (i.e., **Things Complexity**) or interacting with others (i.e., **People Complexity**) may help preserve memory and slow dementia progression. Social policies and programs that prepare and place people with Down syndrome into employment activities can play an important role in the lives of people with Down syndrome.

## Employment Resources

- [Association of Persons Supporting Employment \(APSE\)](#) – employment and career opportunities for individuals with disabilities
- [The Arc](#) - Advocates for and serves people with intellectual and developmental disabilities
- [Corporation for National and Community Service](#) - Engages individuals in service
- [USA.Gov](#) - information on government programs
- [Equal Employment Opportunity Commission](#) - Enforces federal laws to prevent discrimination against applicant or employee because of disability
- [Hire Disability Solutions](#) - Protects and enhances employment for individuals with disabilities
- [Job Accommodation Network \(JAN\)](#) - guidance on accommodations and employment issues
- [Office of Disability Employment Policy \(ODEP\)](#) - Develops and influences disability employment-related policies and practices
- [Project SEARCH](#) - Works to secure competitive employment for people with disabilities
- [Rehabilitation Services Administration](#) – helps locate job training and employment
- [Vocational Rehabilitation Youth Technical Assistance Center \(Y-TAC\)](#) - Provides Vocational Rehabilitation Agencies and professionals with assistance to serve individuals with disabilities
- [Ready 2 Work](#) - Down syndrome Association Greater St. Louis; prepares and places adults into employment. Provided the following tips for this newsletter!

### Full Article:

<https://doi.org/10.1177/17446295231169379>

Piro-Gambetti B, Schworer EK, Handen B, Glukhovskaya M, Hartley SL. (2023). Does Employment Complexity Promote Healthy Cognitive Aging in Down Syndrome? J Intellect Disabil. April; 11. doi: 10.1177/17446295231169379

## TIPS FOR LOOKING FOR A JOB!

- Try to assess your current skills and abilities, and your capacity to learn new skills
- Be open to sharing your learning style(s) and needed supports when considering a training program
- Search for realistic positions/roles that you are interested in
- **Network. Network. Network.** Your friends, your church, as many people as you can – don't hesitate to ask for help or others you can contact
- Make sure your resume is updated, accurate and ready to present to hiring managers

## TIPS FOR GETTING JOB-READY SKILLS!

- Volunteer while you are searching/waiting to begin a new job
- Search for agencies/organizations in your community that offer job-skill training and/or job coaching
- Be prepared to help make the connections and facilitate opportunities



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