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## Visual Deficits and the Effects on Functional Activity among Individuals with Intellectual Disability

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# Visual Deficits and the Effects on Functional Activity among Individuals with Intellectual Disability

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## CASE

Juda is a 26-year-old male with Down syndrome who was referred to occupational therapy due to his inability to perform ADL tasks – especially cooking. He has not seen an ophthalmologist for a wellness checkup in over 2 years. Juda has complained of blurry vision and headaches. The OT performed a simple visual tracking screen, which Juda was unable to complete. The OT now believes his difficulty with ADLs is due to a visual deficit. A referral is needed for further investigation.



## 1 Ask: Research Question

To what extent do visual deficits affect functional activities among adults with intellectual disabilities?

## 2a Acquire: Search Terms

**Databases:** CINAHL Complete, PubMed, ClinicalKey, Scopus

**Search Terms:** Intellectual disability, function, vision, visual deficit, functional activities, cognitive disabilities, mental retardation, Down syndrome, autism, fetal alcohol syndrome, and Williams syndrome

## 2b Acquire: Selected Articles

**Uzdrowska & Woodhouse, (2016):** A cross-sectional observational study in Poland, involving 900 participants who have intellectual disabilities (ID). The study examined visual deficits and their relationship to Special Olympic sports.

**Isralowitz, Madar, Lifshitz, & Assa, (2003):** A prospective longitudinal descriptive study in Israel, which examined visual deficits in individuals with moderate ID and the relationship to TV-watching and cooking.

## 3a Appraise: Study Quality

**Uzdrowska & Woodhouse, (2016):**  
**Level 3**

Strengths include: N=900, multiple analyses of data, wide range of descriptive statistics, and explanation of different visual deficits observed. Limitations include: international study not tested in U.S, wide age range, reliability of reporting, severity of disability unknown, and study protocol was unknown.

**Isralowitz, Madar, Lifshitz, & Assa, (2003):**

**Level 4**

Strengths include: N=106, and reliability of examiners.

Limitations include: 15 year old study, lack of intervention, no mean age provided, limited information about outcome measures, convenience sample, lack of descriptive characteristics, and limited external validity.

## 3b Appraise: Study Results

**Uzdrowska & Woodhouse, (2016):** Significant differences observed between visual acuity and type of sports played, ( $F(8)=3.166, p=.002$ ). A Bonferroni post hoc test was computed, which showed bowling was significantly different in level of visual acuity compared to roller skating, ( $p=.008$ ), soccer ( $p=.001$ ) and basketball ( $p=.015$ ). These findings suggest that visual acuity has an influence on the type of sport played.

**Isralowitz, Madar, Lifshitz, & Assa, (2003):** Through medical screening by ophthalmologists, 79% of participants were found to have visual deficits. Of those individuals that watch TV, 22% reported having difficulty seeing the television. Of the participants that cook, 17% reported difficulty due to visual impairments. These findings suggest that visual deficits impact functional activity.

## 4 Apply: Conclusions for Practice

Based on the limited research on this topic, it appears that visual deficits impact functional performance in individuals with ID. Visual impairments, ocular defects, and uncorrected refractive errors are common among individuals with ID. Data showed a lack of routine eye examinations and eye care among this population. With any population, especially a vulnerable one, it is the service providers' responsibility to consider every aspect of the individual, including visual capacity. Through education, advocacy, and providing accessible eye care, individuals with ID may be able to improve their function in everyday activities.

Using an RCT design, future studies should include how providing individuals with proper eye care increases their independence in daily living.

## References:

Uzdrowska, M., & Woodhouse, M. (2016). Visual defects in special olympics participants from Europe. *Clinical Journal of Sport Medicine, 26*, 133-138. doi: 10.1097/JSM.0000000000000204

Isralowitz, R., Madar, M., Lifshitz, T., & Assa, V. (2003). Visual problems among people with mental retardation. *International Journal of Rehabilitation Research, 26*, 149-152. doi: 10.1097/01.mrr.0000070754.63544.13

Literature validated that people with ID often present with visual deficits. However, limited information is available about how visual deficits directly impact functional activities.

