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Assessment and Introduction of Computer Eye Gaze Systems for People with Severe Motor Disabilities - Clinical Experiences

Eva Holmqvist, Margret Buchholz
DART, Centre for Augmentative and Alternative Communication and Assistive Technology, Queen Silvia's Hospital for Children and Adolescents,, Göteborg, Sweden

Introduction

For individuals with severe motor disorders, computerized activities might be a possibility to manage independently. For some users, eye gaze system might be the only way of independent activities. COGAIN is a network of excellence, supported by European Commission's IST 6th framework program. The network has developed new technologies and systems, improved existing gaze-based interaction techniques, and facilitated the implementation of systems for everyday communication.

Objectives

The main aim has been user-trials for evaluation, development of and sharing framework applications to assist in assessment and implementation of eye-control for individuals with severe motor dysfunction, some also with cognitive and visual problems.

Description/Report

The user trials have included 47 users aged 2 to 63, with varying diagnoses; severe Cerebral Palsy, Multiple Scleroses, Amyotrophic Lateral Scleroses, Spinal Muscle Atrophy, traumatic brain injury, Rett's syndrome etc.

Results/Discussion

When using an eye gaze system the user don't necessarily need to have as much controlled mobility and muscle function but, nonetheless, good seating and working position is essential. A user, who is hypertonic, with a great deal of involuntary movement and unwanted reflex actions, is often more relaxed using an eye gaze system compared with other access methods. The use of appropriate software, personalized to meet individual needs and abilities, is important. All users have answered well to initial use of "simple" applications, which makes the user feel successful and motivated to continue with more demanding tasks.

Conclusion

This poster will discuss important issues when assessing and introducing an eye gaze system and give examples of software applications. The importance of environmental and ergonomic issues will also be discussed.

Contribution to the practice/evidence base of occupational therapy.

OT:s are key persons in the assessment process for computer access. The project has provided information about gaze-based interaction to end-users and professionals and has documented methodology for persons where it's hard to find access method for computer. For those persons, an eye gaze system might be the only way of some independent activities what so ever, and this is a group really benefiting of having access to eye gaze systems.