**ReCoS**

# An Individualized Cognitive Remediation Program for Schizophrenia

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## INTRODUCTION

Today, it is believed that cognitive disorders occurring before the actual start of the disease and found in approx. 85% of all patients modulate the development of the psychotic symptoms (Favrod et al. 2006) and vary depending on the stage of the disease. The deficits mainly encountered affect patients' attention, memory, and executive functions. However numerous studies show that the encountered cognitive deficits greatly differ from one schizophrenic patient to another. Consequently, the programs have to be individualized and developed according to the nature of the deficits of each patient.

## OBJECTIVES

The importance of neurocognitive deficits in schizophrenia has motivated the *Département de Psychiatrie du Centre Hospitalier Universitaire Vaudois* in Lausanne, Switzerland, (DP-CHUV) to develop a cognitive remediation program for patients with a schizophrenia spectrum disease (RECOS). RECOS investigates cognitive deficits using a detailed neuropsychological battery and contains targeted training modules for their remediation. Cognitive training exercises are largely based on the program HAPPYneuron initially developed by Dr. Bernard Croisile. Before treatment, the patients were evaluated with a large battery of tests in order to determine in which of the five specific training modules they would participate. The study was designed to evaluate benefits of the RECOS program by comparing cognitive functioning before and after treatment.

### FIG 1 : THE TRAINING MODULES

VERBAL MEMORY

VISUO-SPATIAL

WORKING MEMORY

SELECTIVE ATTENTION

REASONING

## METHOD

28 patients participated in one to three cognitive modules. The functional outcome of the cognitive deficits was considered for the selection of the training modules. The patients participated in 20 training sessions (one session per week) per module. As executive functioning had been proven crucial in the prediction of a functional outcome, remediation techniques were those used for dysexecutive syndromes. At the end of the training period, the cognitive functioning of each patient was reevaluated with the same neuropsychological battery.
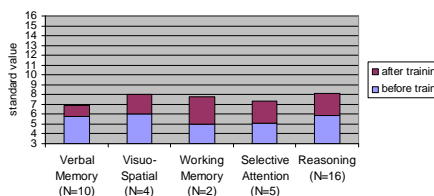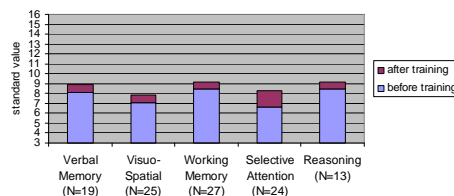


## RESULTS

The results showed a greater improvement in the modules for which training had taken place as opposed to the modules where no training had taken place. However, an improvement was observed in both types of module, indicating a learning transfer effect.

By considering results of the *Wisconsin Card Sorting Test*, a superior effect size has been observed with the RECOS program than with a cognitive remediation program which does not specifically target the deficits of each participant (REHACOM - Cochet et al., 2006).
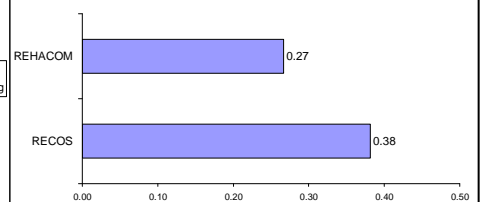


**Trained modules performance before and after cognitive remediation**

**Non trained modules performance before and after cognitive remediation**

**Effect size measured by perseverative errors percentage in the WCST before and after remediation in REHACOM and RECOS**

REHACOM  0.27
RECOS  0.38

## CONCLUSION

This study confirms that the great heterogeneity of observed cognitive deficits in schizophrenia requires a detailed neuropsychological investigation as well as an individualized cognitive remediation therapy. However, these results still need confirmation. To that aim, a multicentre research study in France and in Switzerland aims to validate the RECOS cognitive remediation program, by comparing the RECOS program to Cognitive Remediation Therapy, developed by Ann Delahunty and Til Wykes and already validated. Two comparative study groups of 140 stabilized patients with schizophrenia (DSM-IV) will be treated respectively by RECOS and CRT. Neuropsychological tasks will be conducted before and after cognitive remediation and during a 6-months follow-up. The design of this study could possibly determine the specificities of both programs, taking into account symptoms profiles of the patients.

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