

# Therapeutic Use of VR



## Treating Alcoholism with VR Applications

One area beyond the Game Industry expected to benefit from Virtual Reality (VR) applications is the healthcare and medical sector. Applications span the fields of education, diagnostics and therapy. The following prototype - a VR application - is part of an ongoing project to develop new and innovative forms of therapy for alcohol use disorder (Alcoholism).



The basic principles of the therapy are Cue-Exposure Therapy (CET) and Approach-Avoidance Training (AAT). Within the prototype, pictures of alcoholic and non-alcoholic beverages appear in front of the user and have to be sorted by the user by either pulling them closer or pushing them away. Due to the nature of VR, the user is situated in a virtual environment isolated from external distractions and has to use natural hand movements as he/she uses the VR motion controllers.

Both the immersive experience as well as the motoric activity might also be of therapeutic benefit.

### Studies and Prototypes

In a first study, the VR implementation is compared to previous implementations that use conventional controls on a PC monitor (analogue stick on a gamepad) and swiping controls on a tablet computer. The study also compares some interaction variants that use similar but different hand movements for pulling and pushing the pictures of the beverages. The prototype used in the first study is already finished and the study will start shortly.

In a second study, different ways to represent the beverages will be compared. There will be three distinct versions of each beverage: A highly detailed 3D representation (high-poly 3D) that aims to be as close to photorealism as possible, an abstract 3D representation (low-poly 3D) and a flat photo representation. Based on the lessons learned and the results of the first study, the second study will use the best interaction variant. A set of high-poly 3D beverages is almost finished, representing a significant time investment, as every bottle has to be prepared, photographed and 3d-scanned in order to create the digital equivalent.

The overarching goal of both studies and prototypes is to evaluate the therapeutic benefit and effectivity of using Virtual Reality applications in alcohol therapy. Provided that there is a clear benefit compared to more conventional PC- or tablet-based Approach-Avoidance Trainings, the studies will also identify the most effective interaction variant and visual representation of alcoholic and non-alcoholic beverages. This will ultimately lead towards the development of a therapy application for clinical use.

### Treating Alcoholism with VR Applications - VR Prototype Video

[www.youtube.com/watch?v=tl31jlsFXpl](http://www.youtube.com/watch?v=tl31jlsFXpl)

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**Duration**  
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**Implemented in**  
Germany, Denmark, Estonia,  
Finland, Latvia, Lithuania, Poland  
and Sweden

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