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This protocol is a study of the correlation between depression, anxiety, and stress, and response inhibition as measured with the Stop-Signal Task. It is written to demonstrate the capabilities of LabBench to automate experimental protocols, providing guidance to operators and subjects, and for automatic processing and export of experimental data.

Introduction to LabBench

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# Introduction

The purpose of this protocol is to show how an experimental protocol can be implemented with LabBench. To this purpose a protocol that studies the relationship between Depression, Anxiety and Stress, and response inhibition is implemented. Depression, Anxiety and Stress is assessed with an open and free to use questionnaire, the use of the DASS scale from the Psychology Foundation of Australia []. The DASS scale measures three related emotional states of depression, anxiety, and stress on 42-item self-report questionnaire.

Response inhibition is assessed with the use of a gamified version of the Stop-Signal Task. The classical Stop-Signal Task measures the ability to supress actions that are no longer required or appropriate. In the Stop-Signal Task participants are asked to perform a Go task that at random and infrequent times are interrupted by a Stop-Signal. Without a Stop-Signal the subjects see a Go signal of a left or right arrow and must press the left or right button respectively. In these Go-trials, not pressing a button is an error and the goal is to press the correct right or left button as fast as possible. However, in the Stop trials where a Stop-Signal is presented with a delay after the Go-Signal, the participant must inhibit their response, and in these trials pressing a button is an error.

# Running the protocol

## Experimental setup

## Procedures

## Installing the protocol

To install the protocol; 1) Select the Protocols page, 2) Select the labbench.io repository, 3) Select the Alloknesis protocol, and 4) click the (+) add protocol button.

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Figure 5: Procedure for how to install the protocol.

# Writing the protocol

# Analysing experimental data

# Experimental Setup

# Protocol

# Using the protocol

The protocol can be installed from the (labbench.io) repository, which is available by default when LabBench is installed.

## Required devices

Before the protocol can be installed a LabBench I/O device must first be added to the LabBench installation (see Figure X). First start the LabBench Designer, to check that a LabBench I/O device is present or to add such a device if it is not, and then: 1) Select the Protocols Page, 2) Select the LabBench I/O device, 3) check that a LabBench I/O device is installed and available.

If a LabBench I/O device is not installed, then install one by first ensuring that the device is connected to the computer and then clicking on the (+) add device button.

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Figure 4: Illustration of how to check if a LabBench I/O has been added to the LabBench system.

# Results

# Discussion

# License

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# References