

Measuring the effects of Cannabis use on the processing speed of Cranial Nerves II, III, IV and VI - (a differential analysis)

Following is an abbreviated version of the case study. If you are interested in receiving the full report, please contact Axon Medical Technologies



Test equipment:

The **Intellig-EYES™** headgear manufactured by Axon Medical Technologies measures and records the CN 2, 3, 4 and 6's response to controlled stimuli.

Patient: A 24-years-old male (Patient# 12) with existing baseline data, was tested after smoking cannabis on 2/23/2021 (Scan# 4639).

Case description: In order to quantify the level of neurological impairment as a result of cannabis use, the Intellig-EYES™ headgear was used to test him after use. The device determined the level of changes to his cranial nerves II, III, IV and VI neurological response performance. This patient had a similar 87-second test performed using the same type of equipment on 2/04/2019 (Scan# 4060). The data from his previous test results were stored in Axon Medical's servers and served as a comparative baseline data for this differential analysis.

Assessment/Results: Comparing the patient's scan data from after the cannabis use to his baseline data revealed the following significant changes (see graphs):

A- Pupil diameters (CN 2, 3) percentage change dropped and were **significantly lower** after the cannabis use change= -47.1 %

B- Autonomic Learning (CN 2, 3) significantly dropped from +115% to -5% and was **virtually non-existent** after cannabis use

C- Pupil constriction rate (CN 2, 3) **significantly dropped** by - 64.3% after cannabis use

D- Pupil deviation from ortho (CN 4, 6) were **significantly higher** by + 325% after cannabis use

E- Pupil re-convergence rate to ortho (CN 4, 6) were **significantly higher** by +342% after cannabis use

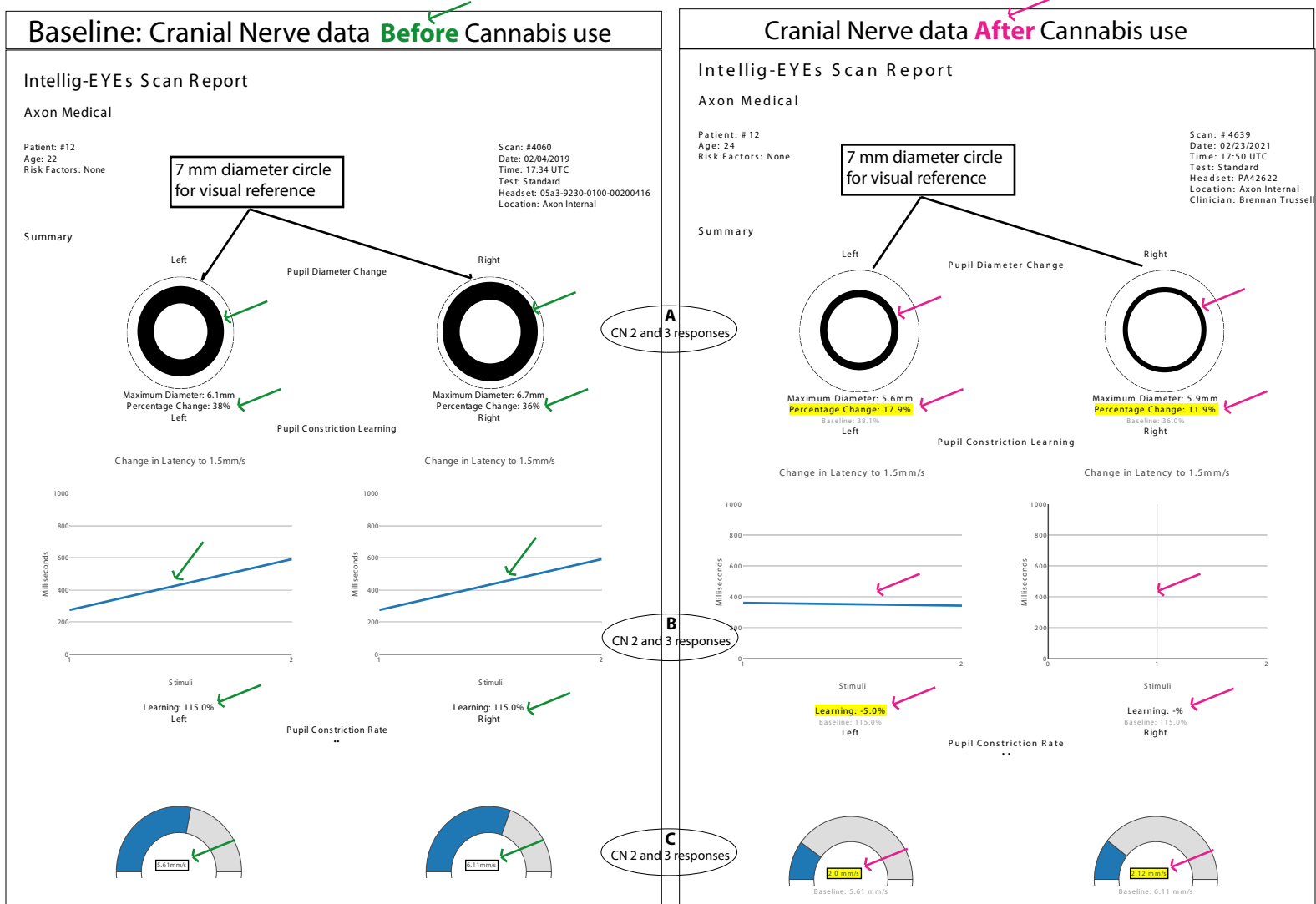
F- Pupil reaction to stimuli (CN 2, 3) significantly dropped and was **virtually non-existent** after cannabis use

G- The response of CN 4 and 6 to the stimuli for the left eye, **significantly improved** with cannabis use

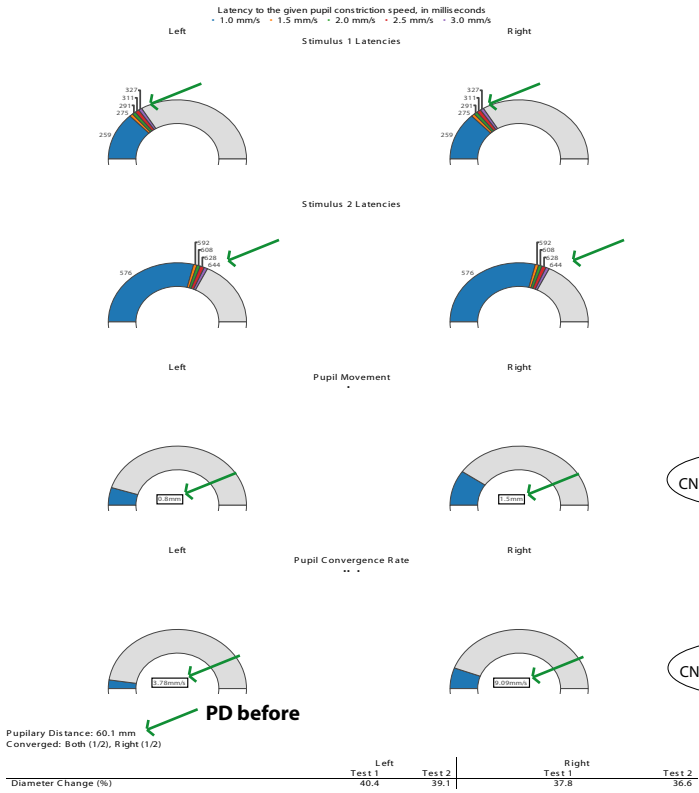
H- The response of CN 4 and 6 to the stimuli for the right eye, **significantly improved** with cannabis use

Discussion: The cranial nerves 2 and 3 control the pupil diameter and the rate its size changes as a response to external stimuli. Clearly, a cannabis user, exhibits noticeable decrease in CN 2 and 3's adaptation ability as well as a severe drop in autonomic learning, when measured by reaction to stimuli by their pupil autonomic control system. The cranial nerves 4 & 6 control the ocular movements (convergence). **Surprisingly**, after cannabis use, this patient showed functional improvement with convergence (CN 4 and 6). Convergence difficulties usually lead to higher anxiety in a patient.

Conclusion: It appears that the cannabis use, did reduce the autonomic nervous system's fluctuations (anxiety) experienced by the patient as documented by the baseline data recorded two years prior to this test (G & H). This documented improvement in the performance of CN 4 and 6 (convergence function) should be studied further, as it may be a **biomarker to help identify the individuals who are prone to drug abuse**.



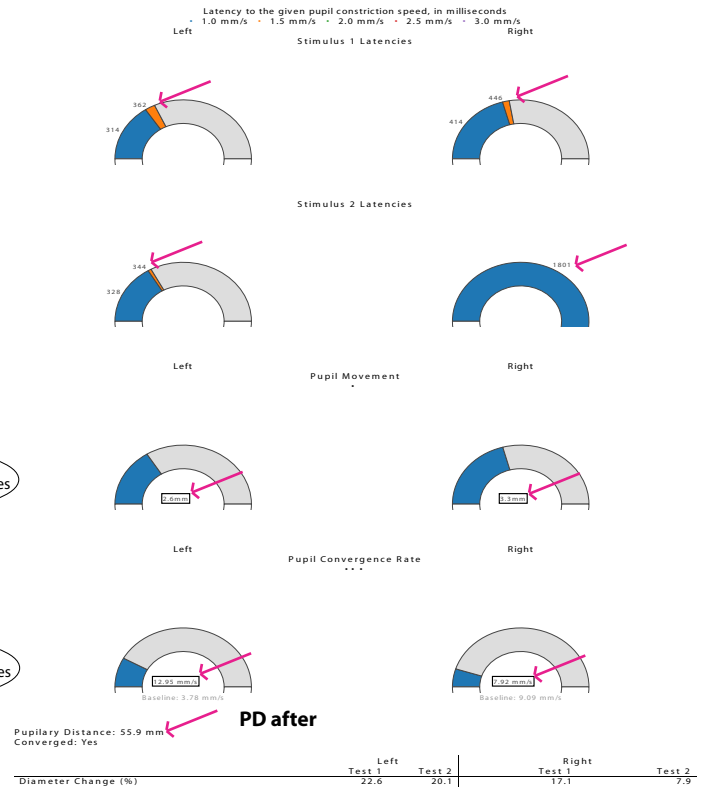
Baseline: Cranial Nerve data **Before** Cannabis use (Continued)



D
CN 4 and 6 responses

E
CN 4 and 6 responses

Cranial Nerve data **After** Cannabis use (Continued)



F
CN 2 and 3 responses

G
CN 4 and 6 responses

H
CN 4 and 6 responses

