QYSCORE®

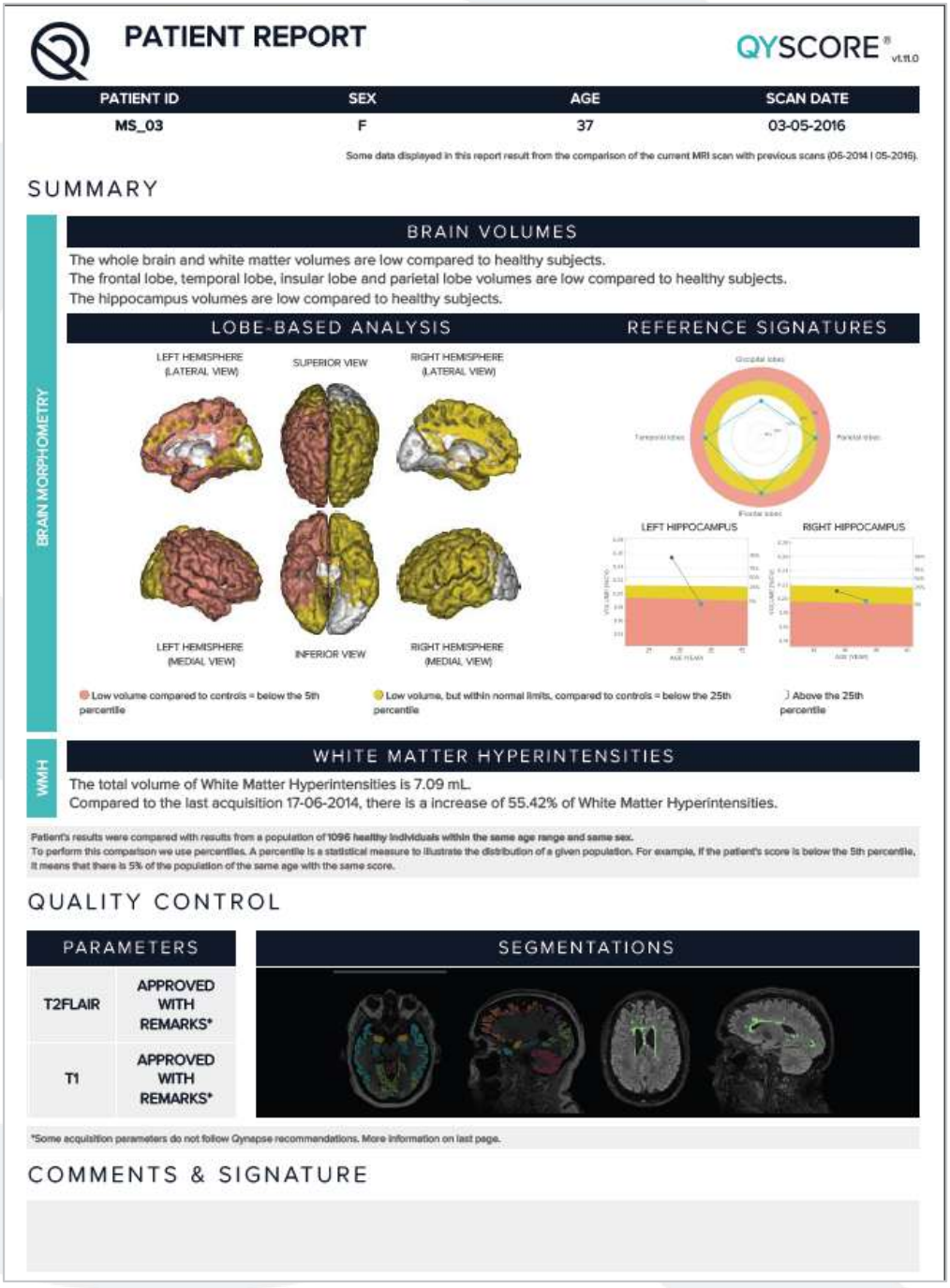
QyScore® is an artificial intelligence software that allows automated, reliable and reproducible calculation of several Neuroimaging parameters:

- Volumetric measurements of the **brain**, **lobes**, of anatomic zones of interest such as **hippocampus** and **amygdala**
- Results are compared to a **normative data base** to determine the level of atrophy and evaluate its severity
- Volumetric and spatial measurements of **white matter hyperintensity signals**
- **Longitudinal follow up to** quantify atrophy and white matter lesions progression over successive scans.

INDICATIONS:

- ❑ Cognitive decline evaluation, Alzheimer's disease and other dementia
- ❑ Demyelinating disorders such as multiple sclerosis or neurodegenrative disorders
- ❑ Other neurodegenrative disorders (Parkinson's disease)

QYSCORE® REPORT IN BRIEF – [MILD COGNITIVE IMPAIRMENT]



PATIENT REPORT

QYSCORE® v1.11.0

PATIENT ID	SEX	AGE	SCAN DATE
MS_03	F	37	03-05-2016

Some data displayed in this report result from the comparison of the current MRI scan with previous scans (05-2014 | 05-2016).

SUMMARY

BRAIN MORPHOMETRY

BRAIN VOLUMES

The whole brain and white matter volumes are low compared to healthy subjects.
The frontal lobe, temporal lobe, insular lobe and parietal lobe volumes are low compared to healthy subjects.
The hippocampus volumes are low compared to healthy subjects.

LOBE-BASED ANALYSIS

REFERENCE SIGNATURES

LEFT HEMISPHERE (LATERAL VIEW) SUPERIOR VIEW RIGHT HEMISPHERE (LATERAL VIEW)

LEFT HEMISPHERE (MEDIAL VIEW) INFERIOR VIEW RIGHT HEMISPHERE (MEDIAL VIEW)

LEFT HIPPOCAMPUS RIGHT HIPPOCAMPUS

Low volume compared to controls = below the 5th percentile
Low volume, but within normal limits, compared to controls = below the 25th percentile
Above the 25th percentile

WMH

WHITE MATTER HYPERINTENSITIES

The total volume of White Matter Hyperintensities is 7.09 mL.
Compared to the last acquisition 17-06-2014, there is a increase of 55.42% of White Matter Hyperintensities.

Patient's results were compared with results from a population of 1096 healthy individuals within the same age range and same sex.
To perform this comparison we use percentiles. A percentile is a statistical measure to illustrate the distribution of a given population. For example, if the patient's score is below the 5th percentile, it means that there is 5% of the population of the same age with the same score.

QUALITY CONTROL

PARAMETERS	
T2FLAIR	APPROVED WITH REMARKS*
T1	APPROVED WITH REMARKS*

SEGMENTATIONS

*Some acquisition parameters do not follow Qynapse recommendations. More information on last page.

COMMENTS & SIGNATURE

Patient Information

Results summary

3D Analysis based on 3DT1 sequences, shown under different angles

Global view of **atrophy level**: detailed results, quantifications and graphs compared to a **normative data base** (*cf. verso*)

Summary of volumetric and spatial analysis of **white matter hyperintensities**

Description of the **normative data base** (*cf. verso*)

Detailed results of **quality control** of automated sequences and acquisition

Screen shot of results allowing for a **visual quality control** of segmentations

Radiologist's comments

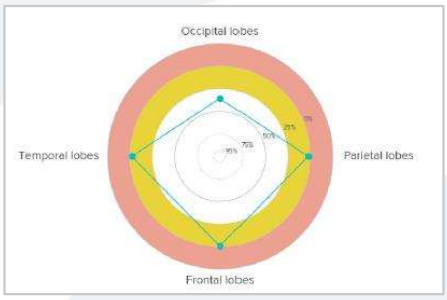
QYNAPSE

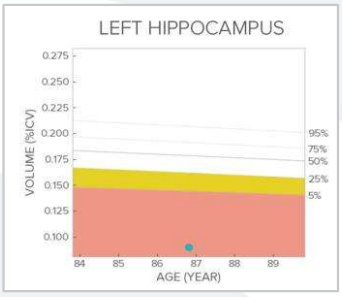
QYSCORE®

RESULTS, SCORES AND NORMATIVE DATA BASE – EXPLANATIONS

Interpret results as PERCENTILES

Percentiles are used to illustrate how to position a patient when compared to a **control population** (**healthy subjects, same age category, same sex**), from the normative data base. For example, for a patient in the 25th percentile, it means that 25% of patients from the data base (same age, same sex) have a volume identical or inferior, and that 75% of individuals have a volume superior to the examined patient.





5 - 25

< 5

Between the **5th and 25th percentile**, the measure corresponds to a moderate atrophy, but within the norm.

Below the **5th percentile**,the measure of atrophy is considered as **abnormally low** compared to the reference population.

Interpret results as Z-SCOREs

The Z-score is shown as **standard deviation** units (SD) compared to the average value of the **control population** in the same age and sex category. A low Z-score, for example below the threshold of -2, reflects an abnormally low measure, or less than 3% of the population is considered to have a smaller volume.

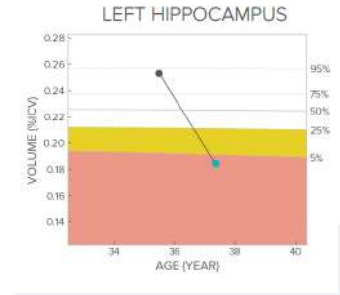
HIPPOCAMPUS	LEFT
VOLUME	0.18 %ICV (2.41 ML)
VOLUME NORMAL RANGE*	0.19 - 0.26 %ICV
Z-SCORE	-2.18

Example: hippocampal normal volume is between 0.19 and 0.26 % of total incranial volume (ICV). The patient's left hippocampal volume is 2.41 ml i.e. 0.18% of ICV, which corresponds to a ***standard deviation of - 2.18 SD*** *(**Z-Score = -2.18**) compared to the* ***average value of the reference population*** *from the same age class*

Understand the REFERENCE DATA BASE (normative data base of healthy subjects)

QyScore® results (percentiles and z-scores) are generated in comparaison with a normative data base of **2000 healthy individuals** with a **diversity of geography**, **sex** and covering ages between **20 and 90 years old. Median age** of the normative data base being 62 years old, younger patients are compared to smaller groups.

Interpret LONGITUDINAL ANALYSIS



VOLUME CHANGE**	-27.1%

longitudinal Analysis : When successive patient's scans are available, the software automatically delivers results of analyzed parameters (as many data points as there are available time points will be visible on the graph).
Resullts are also shown as % volume change.

QYNAPSE

www.qynapse.com

QyScore® is a medical device software FDA-cleared – class II and CE-marked – class IIa.

Indications for Use in the U.S. (FDA): QyScore® is intended for automatic labeling, visualization and volumetric quantification of segmentable brain structures and lesions from a set of MR images. Volumetric data may be compared to reference percentile data.QyScore® is not intended for use in clinical scenarios that require evaluation of the number of the white matter hyperintensities.

Indications for Use in Europe (CE): QyScore® is an advanced processing and visualization software for automatic labeling and volumetric quantification of segmented central nervous system structures for patients older than 18 years of age. The software is intended to be used by medical personnel or neuroimaging trained personnel to support diagnosis of central nervous system diseases.

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