

Standard Operating Procedure for Perfusion Measurements and Arterial Spin Labeling (ASL)

*How to take variability of physiological
brain perfusion into account?*

Manual and SOP documents

Documentation version 1.0

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Content

INTRODUCTION	4
1. PHYSIOLOGICAL VARIABILITY IN BRAIN PERFUSION	4
2. PERFUSION MODIFIERS	4
3. STANDARD OPERATING PROCEDURE (SOP)	6
A. <i>Main goals of the SOP</i>	6
B. <i>SOP structure: from perfusion-modifier to SOP component</i>	6
C. <i>Recommendations</i>	9
REFERRING TO THE SOP	12
1. GENERAL REFERENCES	12
2. SOP COMPONENT-SPECIFIC REFERENCES	12
HOW TO USE THE SOP	14
1. QUESTIONNAIRES (Q)	18
I. <i>General information</i>	18
a. Personal details	18
b. Family and social life*	19
c. Education level	19
d. Professional life	20
e. Hobbies	20
f. Sports	21
g. Handedness*	21
h. Personality*	22
i. Caffeine consumption*	22
j. Nicotine consumption*	23
k. Alcohol consumption*	23
l. Recreational drug consumption	24
m. Diet	25
n. Health	25
o. Medication use	25
II. <i>Day of scan</i>	26
a. Mood	26
b. Extreme sports	26
c. Last caffeine consumption	27
d. Last nicotine consumption	27
e. Last alcohol consumption	27
f. Last recreational drugs consumption	28
g. Hunger and thirst	29
h. Health	29
i. Sleep	29
j. Medication use	30
2. MEASUREMENTS	31
I. <i>During the scan session</i>	31
a. Perfusion scan information	31
b. Wakefulness	32
c. Mood	32

Standard Operating Procedure for Perfusion Measurements and Arterial Spin Labeling (ASL)



d. Physiological measurements	33
<i>II. After the scan session</i>	34
a. Body temperature and blood pressure	34
b. Blood and urine sample	34
3. NEUROPSYCHOLOGY	36
a. Symptom Checklist-90-Revised (SCL90)	36
b. Stroop Test	36
c. RBANS (Repeatable Battery for the Assessment of Neuropsychological Status)	37
d. National Adult Reading Test	37
4. INSTRUCTIONS	38
<i>I. Session instructions</i>	38
a. Time of day	38
b. Scanner surroundings	38
<i>II. Patient instructions before scan session</i>	39
a. Restrictions	39
<i>III. Patient instructions during scan session</i>	40
a. Eyes	40
b. Movement	40
c. Resting state	40
d. Wakefulness	40
ACKNOWLEDGMENTS AND CONTACT INFO	41
1. ACKNOWLEDGEMENTS	41
2. CONFLICTS OF INTEREST	41
3. CONTACT INFORMATION	41
REFERENCES	42
SUPPLEMENTARY FILES: SOP DOCUMENTS	43
SUPPLEMENTARY FILES: SCORING	105

Introduction

1. Physiological variability in brain perfusion

Brain perfusion is affected by numerous factors related to physiology, lifestyle, diet and medication use, leading to a large between- and within-subject perfusion variability (16.2% and 4.8%, respectively).¹ This variability confounds the interpretation of brain perfusion measurements, for example in early pathological stages. Alternatively, physiological variations at the individual level, can be mistaken as abnormalities when not properly taken into account. Such unwanted variations of perfusion should be small compared to disease-related alterations if ASL-based perfusion measurements are to be used in individual patients.

2. Perfusion modifiers

A perfusion **modifier** is defined as any **normal physiological variation** that gives rise to a change in cerebral perfusion. Those non-medication related perfusion modifiers can be classified into four groups, which have been used in the review for structuring the results sections (Table 1):

- 1/ *Physiology, lifestyle and health*
- 2/ *Blood components*
- 3/ *Mental state, personality and cognition*
- 4/ *Caffeine and recreational drugs*

Additionally, *medication* can be considered as a fifth group.

The specific effects of those non-medication related modifiers on absolute and relative cerebral perfusion have been described in the main review for which this manual is supplemented. In order to be able to take those effects into account, and hence decrease the variability causing interpretation difficulties, a standard operating procedure was proposed which is described in further detail in this manual.

Table 1 – Summary of non-medication related perfusion modifiers, classified into four groups.

Physiology, lifestyle and health	Blood components	Mental state, personality and cognition	Caffeine and recreational drugs
Age	Blood gases: O ₂	Stress	Caffeine
Occupation	Blood gases: CO ₂	Anxiety	Energy drinks
Social environment	Hematocrit	Yoga & meditation	Nicotine
Gender	Blood viscosity	Mood	Alcohol
Menstrual cycle	Hemoglobin	Cognitive capacity	Recreational opioids
Pregnancy	Fibrinogen	Creativity	Amphetamines
Menopause	Blood glucose	Personality	Cocaine
Diurnal rhythm	Homocysteine	Sleep	Cannabis
BMI	Cholesterol	Drowsiness/ sleepiness	Solvents & inhalants
Physical exercise / training	Ketone bodies	Open/closed eyes	MDMA & LSD
Altitude	ADMA	Mental activity	Psilocybin
Diving	Free fatty acids	Arousal	
Blood pressure			
Heart rate			
Body temperature			
Mobile phone			
Nutritional diet			
Hunger/satiety			
Fat intake			
Sugar intake			
Thirst			

3. Standard Operating Procedure (SOP)

A. Main goals of the SOP

A **standard operating procedure** is proposed in order to try to take this between- and within-subject perfusion variability into account. Although this procedure is mostly applicable in the context of perfusion measurements using arterial spin labeling (ASL), it can be used as a normalisation tool for other perfusion techniques as well.

The first main goal in the development of this SOP includes the acquisition of personalized profiles, in combination with perfusion data, from a large number of healthy subjects. This information would provide an opportunity to develop and evaluate the so-called theory of ‘*deep MRI phenotyping*’. The theory claims that it would be possible to match a given volunteer to a specific phenotypic profile by using perfusion data and personalized information.

Secondly, this SOP was developed in order to provide perfusion researchers a means to correct for the effects of all perfusion-modifiers and reduce variability in perfusion data during in the context of their own study. In clinical settings, such a procedure is also recommendable, at least to account for the effects of the most important perfusion-modifiers. Some recommendations on which modifiers should be taken into account in a specific setting are provided in chapter *C. Recommendations*.

B. SOP structure: from perfusion-modifier to SOP component

Each **perfusion-modifier** (Table 1) can be divided in multiple **modifier-specific aspects**; for example, caffeine can be divided in the aspects: 1/ acute use (what was used today); 2/ chronic use (daily use); and 3/ past use (daily use in the past).

In contrary, the structure of SOP is based on a more workable and intuitive approach, dividing the SOP in four **SOP categories** (code):

- 1/ *Questionnaires (Q)*
- 2/ *Measurements (M)*
- 3/ *Neuropsychology tests (N)*
- 4/ *Instructions (I)*

Table 2 summarizes the perfusion modifiers for each SOP category.

Standard Operating Procedure for Perfusion Measurements and Arterial Spin Labeling (ASL)

Table 2 – Summary of the perfusion-modifiers divided over the four subdivisions.

Questionnaire (Q)		Measurements (M)		Neuro- psychology (N)	Instructions (I)
Age	Thirst	Diurnal rhythm	Free fatty acids	IQ	Diurnal Rhythm
Occupation	Stress	Blood pressure	Stress	Cognitive capacity	Physical exercise/training
Social environment	Anxiety	Heart rate	Anxiety		Mobile phone
Gender	Mood	Body temperature	Mood		Hunger/Satiety
Menstrual cycle	IQ	Blood gasses: O ₂	Sleep		Fat intake
Pregnancy	Cognitive capacity	Blood gasses: CO ₂	Drowsiness/ Sleepiness		Sugar intake
Menopause	Creativity	Hematocrit	Arousal		Thirst
BMI	Personality	Blood viscosity	Caffeine concentration		Sleep
Physical exercise/ training	Drowsiness/ sleepiness	Hemoglobin	Nicotine concentration		Drowsiness/ Sleepiness
Altitude	Arousal	Fibrinogen	Alcohol concentration		Open/closed eyes
Diving	Caffeine	Blood glucose			Mental activity
Nutritional diet	Energy drinks	Homocysteine			Caffeine
Hunger/satiety	Nicotine	Cholesterol			Nicotine
Fat intake	Alcohol	Ketone bodies			Alcohol
Sugar intake	Recreational drugs	ADMA			Recreational drugs
Additional potential perfusion modifiers (not studied in literature/not included in review)					
Educational level	Pathology	Respiratory rate		Pathology	Medication
Handedness	Medication				

Each SOP category comprises several **SOP components** (indicated with a code, e.g. Q.I.CAF). A perfusion-modifier and its aspects can thus be covered by several SOP components.

For clarity, the case of caffeine was visualized in Figure 1. The **perfusion-modifier caffeine** can be divided into three **modifier-specific aspects**: 1/ acute use; 2/ chronic use; and 3/ past use. The acute use of caffeine, for example, is covered in the **SOP components** Q.II.CAF (**category** Questionnaires), M.II.BLO (**category** Measurements), and I.I.RES (**category** Specific instructions).

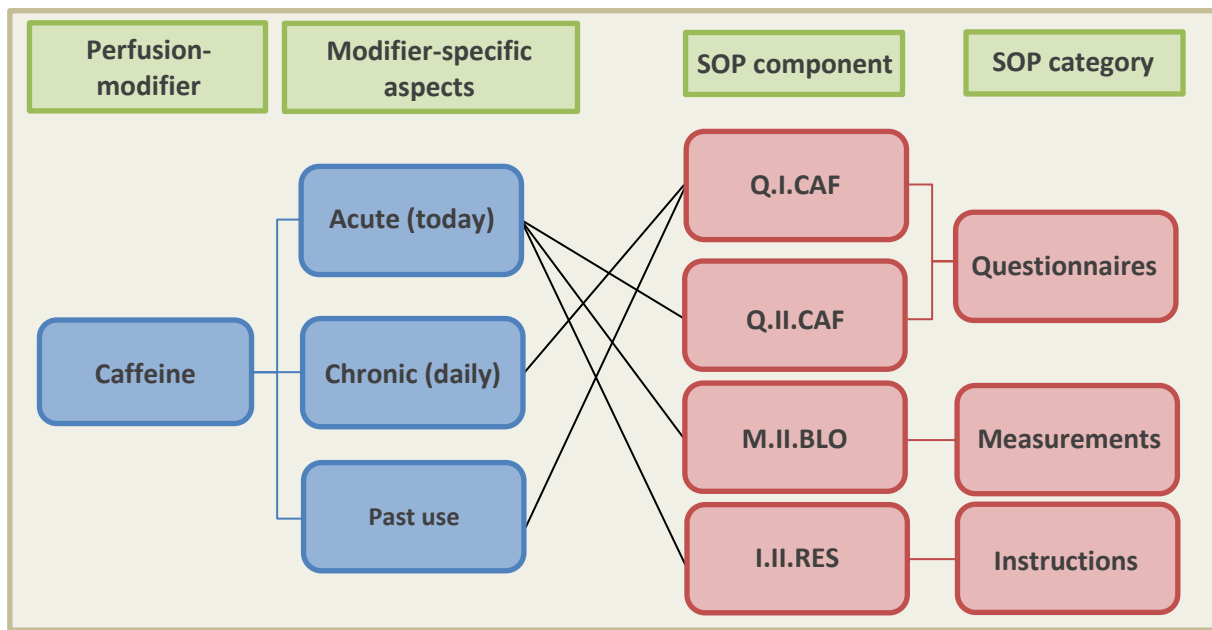








Figure 1 – SOP structure for the perfusion-modifier *caffeine*.

C. Recommendations

The SOP includes measures for (almost) all perfusion-modifiers, even those only minimally contributing to the variability, for purposes regarding the ‘*deep MRI phenotyping*’ theory. Often, the effects of some modifiers are still unknown or literature fails to provide consistent conclusions.

Due to this high amount of perfusion-modifiers and modifier-specific aspects, a classification was proposed based on the effect size on perfusion, and the prevalence and consistency in the literature (Table 3). The classification of the modifier-specific aspects is summarized in Table 4.

Table 3 – Legend of the color-coded classification based on the effects size on perfusion, and prevalence and consistency in the literature.

Colour	Effect size	Prevalence	Consistency
	High	High	Consistent
	Medium	High	Consistent
	High to medium	High	Inconsistent
	No quantitative information	High	Consistent and inconsistent
	High to medium	Low	/
	No quantitative information	Low	/
	Low	High and Low	Consistent and Inconsistent
	Potential perfusion modifier/modifier specific aspect, not yet studied in literature		

Standard Operating Procedure for Perfusion Measurements and Arterial Spin Labeling (ASL)

Table 4 – Color-coded categories of modifier-specific aspects in relation to effect size, and current prevalence and consistency.

Effect size → Prevalence/ Consistency ↓	1 (> 24%, > 15 ml/100g/min)	2 (between 14% and 24% or between 6 and 15 ml/100g/min)	3 (<14%, < 6 ml/100g/min)	4 (Unknown)
A (High prevalence, consistent across studies)	Age (adult), age (child), physical exercise (during), hypercapnia, hypocapnia, NREM	Caffeine (acute), amphetamines (acute), cannabis (acute)		Mobile phone (during use – task), extraversion, introversion, amphetamines (abstinence)
B (High prevalence, inconsistent across studies)	Gender, physical exercise (after), physical training, active lifestyle, hypertension, hyperoxia, hematocrit, anxiety (all), long-term cognitive training, REM, alcohol (acute/abstinence long-term), cocaine (acute), cannabis (chronic)	Hypoxia, nicotine/smoking (acute/chronic/abstinence 24h), alcohol (chronic)	Hypoglycaemia, sad mood, happy mood	Satiety (after hunger), thirst, satiation (after thirst), IQ, memory performance, recreational opioids (acute/abstinence), cocaine (chronic), cannabis (abstinence), solvents and inhalants (chronic)
C (Low prevalence, low number of studies)	High altitude (short stay – months), circulating homocysteine, hyperketonemia (acute), open eyes, light, mental activity, alcohol (abstinence 24h), solvents and inhalants (acute), physical training (10 day training cessation)	Occupation, hyperthermia, hemoglobin, fibrinogen, waking up, awakened, former smoker, cocaine (former user 6mo)	Social environment, menstrual cycle, BMI, high altitude (medium stay – days), high altitude (long stay – weeks/months/years/native), fat intake, hyperketonemia (after 3 days), ADMA, stress, arousal, caffeine (chronic), MDMA (abstinence)	Pregnancy, menopause, diurnal rhythm, fat free mass, overweight, back after high altitude, (former) divers, hypotension, heart rate, mobile phone (during use – resting), mobile phone (after use – task + resting), high nitrate diet, fasting (Ramadan), sugar intake, blood viscosity, cholesterol (total/LDL/HDL), free fatty acids, anxiety (low → moderate / moderate → high), yoga/meditation, disgust, worry, anger, processing speed/attention, executive function, fluid ability, MMSE, cognition, short cognitive training, creativity, personality traits, wake/sleep transition, drowsiness/sleepiness, caffeine (abstinence), energy drink, acute NRT gum, recreational opioids (chronic), amphetamines (chronic), cocaine (abstinence/former user >1year), LSD, psilocybin (acute)
Potential modifier; not studied	Educational level, handedness, back after diving, body temperature (normal range), fever, hypothermia, respiratory rate, hypoglycaemia, other mood states, MDMA (chronic/abstinence), psilocybin (chronic/abstinence), solvents and inhalants (abstinence), mescaline, barbiturates (recreational)			

Depending on the goal of the SOP in a given study and the setting of that study, specific **modifier-specific aspects** can be included, based on this table.

- **General perfusion (ASL) research – high interest in correcting for variability:** the use of *all* modifier-specific aspects *but those in B3 and C3* is recommended. Optionally, B3 and C3 can be included, although the effects of those modifier-specific aspects appear to be rather small.



- **General perfusion (ASL) research – moderate interest in correcting for variability:** the use of the modifier-specific aspects in *A1, A2, A4, B1, B2 and B4* is recommended.



- **Clinical use and general perfusion (ASL) research – low interest in correcting for variability:** the use of the modifier-specific aspects in *A1 (and preferably A2)* is recommended.



The use of this colour code is maintained during the rest of this manual and in the supplementary files to aid researchers and clinicians using perfusion imaging in the selection of the recommended **SOP components** complying with their needs.

Referring to the SOP

When using this SOP in own perfusion research and in clinical setting, and publishing results based on this SOP, the general references should always be used. Moreover, depending on the specific SOP components used, additional references should be included in the manuscript, to refer to the original publications of tests incorporated in this SOP.

1. General references

Clement P, Mutsaerts H-J, Václavů L, Ghariq E, Pizzini FB, Smits M *et al.* Variability of physiological brain perfusion in healthy subjects – A systematic review of modifiers. Considerations for multi-center ASL studies. *Journal of Cerebral Blood Flow & Metabolism* 2018; 38(9): 1418-1437.

2. SOP component-specific references

Q.I.SOC – UCLA Loneliness Scale Version 3.0:

Russell, D. (1996). UCLA Loneliness Scale (Version 3): Reliability, validity, and factor structure. *Journal of Personality Assessment*, 66, 20-40.

Q.I.EDU – International Standard Classification of Education: education level and education field

United Nations Educational, Scientific and Cultural Organisation, UNESCO Institute for Statistics. *International Standard Classification of Education ISCED 2011*. UIS/2012/INS/10/REV. (2012), available from <http://unesdoc.unesco.org/images/0022/002280/228085e.pdf>

United Nations Educational, Scientific and Cultural Organisation, UNESCO Institute for Statistics. *ISCED fields of education and training 2013 (ISCED-F 2013): manual to accompany the International Standard Classification of Education 2011*. UIS/2014/INS/4 REV. (2014), available from <http://unesdoc.unesco.org/images/0022/002280/228085e.pdf>

Q.I.HAN – Edinburgh Handedness Inventory

Oldfield RC. The assessment and analysis of handedness: the Edinburgh inventory. *Neuropsychologia* 1971;9(1):97-113.

John OP, Donahue EM, Kentle RL. The Big Five Inventory--Versions 4a and 54. University of California, Berkeley, Institute of Personality and Social Research 1991.

John OP, Naumann LP, Soto CJ. Paradigm shift to the integrative Big Five trait taxonomy: History, measurement, and conceptual issues. In OP John, R W Robins, & L A Pervin (Eds), Handbook of personality: Theory and research (pp 114-158) New York, NY: Guilford Press 2008.

Benet-Martinez V, John OP. Los Cinco Grandes across cultures and ethnic groups: Multitrait multimethod analyses of the Big Five in Spanish and English. Journal of Personality and Social Psychology 1998;75:729-750.

Q.I.NIC – Fagerström Test for Nicotine Dependence

Heatherton TF, Kozlowski LT, Frecker RC, Fagerstrom KO. The Fagerstrom Test for Nicotine Dependence: a revision of the Fagerstrom Tolerance Questionnaire. British journal of addiction 1991;86(9):1119-1127.

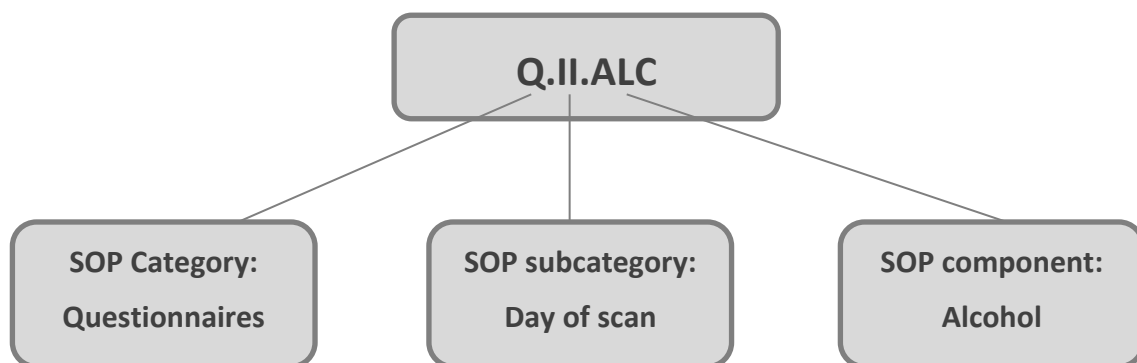
Q.I.NIC – Positive and Negative Affect Schedule - Expanded

Watson D, Clark LA. The PANAS-X, Manual for the Positive and Negative Affect Schedule-Expanded form. Unpublished 1999;University of Iowa.

How to use the SOP

The SOP for perfusion measurements consists of four SOP categories: questionnaires (**Q**), measurements (**M**), neuropsychology (**N**) and instructions (**I**). Each category consists of one to three subcategories (**I/II/III**) indicating the timing of the measure taken. All subcategories comprise several SOP components, which are indicated with a three-letter abbreviation, referring to the perfusion-modifier covered by the SOP component (e.g. **ALC** for alcohol).

Combining those three elements, each SOP component can be traced back by its **three-piece code**. For example:



This code indicates that this SOP component is a questionnaire about the perfusion-modifier alcohol which should be used during the day of the scan session. Specifically, this component queries the intake of alcohol during the scan session day (modifier-specific aspect: acute intake).

All SOP components, including codes, perfusion modifiers and modifier-specific components are summarized in Table 5. The highest classification colour is given for each **SOP component**. For ease of use, we recommend to include the complete SOP component in your own study-based set of the SOP (especially for the questionnaires), although sometimes even questions regarding other modifier-specific aspects are included which might not be needed for your own study purposes. All SOP documents can be found in the Supplementary files of this manual. For several SOP components, a scoring form is required for evaluating the information, which can be found in the Supplementary files of this manual as well. Those scoring files are indicated with the identical code as the SOP component, supplemented with an asterisk.

Standard Operating Procedure for Perfusion Measurements and Arterial Spin Labeling (ASL)

Table 4 – Summary of the components in the standard operating procedure. For each component, the SOP category, subcategory, code, perfusion-modifier and modifier-specific aspect is given. The need for a scoring form is indicated with an asterisk in the code column.

Category	Subcategory	SOP component	CODE	Perfusion-modifier	Modifier-specific aspect
Questionnaires	General info	Personal details	Q.I.PER	Age/Gender/BMI/IQ	Age/Gender/BMI/Overweight/IQ
Questionnaires	General info	Family and social life	Q.I.SOC(*)	Social environment	Social environment
Questionnaires	General info	Education level	Q.I.EDU	Education level	Education level
Questionnaires	General info	Professional life	Q.I.JOB	Occupation/Solvents and inhalant	Occupation/Solvents and inhalants (chronic)
Questionnaires	General info	Hobbies	Q.I.HOB	Creativity/Social environment/cognitive capacity	Creativity/Social environment/cognitive capacity
Questionnaires	General info	Sports	Q.I.SPO	Physical exercise/training/Altitude/Diving	Physical training/Active lifestyle/Climbers/Divers/Former divers
Questionnaires	General info	Handedness	Q.I.HAN	Handedness	Handedness
Questionnaires	General info	Personality	Q.I.PER	Personality	Extraversion/Introversion/Personality traits
Questionnaires	General info	Caffeine consumption	Q.I.CAF*	Caffeine/Energy drinks	Caffeine (chronic)/Caffeine (abstinence)/Energy drinks
Questionnaires	General info	Nicotine consumption	Q.I.NIC*	Nicotine	Nicotine (chronic)/Former smoker
Questionnaires	General info	Alcohol consumption	Q.I.ALC*	Alcohol	Alcohol (chronic)/Alcohol (abstinence long-term)
Questionnaires	General info	Recreational drug consumption	Q.I.DRU	Cannabis/Cocaine/Amphetamines/Recreational opioids/MDMA&LSD/Mescaline/Psilocybin/Solvents and Inhalants/Barbiturates	Chronic / Abstinence / Former user
Questionnaires	General info	Diet	Q.I.DIE	Nutritional diet	High nitrate diet/Fasting (Ramadan)
Questionnaires	General info	Health	Q.I.HEA	Pathology /Stress/Anxiety	Pathology/Stress/Anxiety (all)/Anxiety (low → moderate/moderate → high)
Questionnaires	General info	Medication use	Q.I.MED	Medication	Medication (chronic)/Medication (past)
Questionnaires	Day of scan	Mood	Q.II.MOO*	Mood/Drowsiness/Sleepiness/Arousal	Happy mood/Sad mood/Fear/Disgust/Worry/Anger/Other mood states/Drowsiness/

Standard Operating Procedure for Perfusion Measurements and Arterial Spin Labeling (ASL)

					Sleepiness/Arousal
Questionnaires	Day of scan	Extreme sports	Q.II.SPO	Altitude/Diving	Back after high altitude/ Back after diving
Questionnaires	Day of scan	Last caffeine consumption	Q.II.CAF	Caffeine / Energy drinks	Caffeine (acute)/Caffeine (abstinence)/ Energy drinks
Questionnaires	Day of scan	Last nicotine consumption	Q.II.NIC	Nicotine	Nicotine (acute)/Nicotine (abstinence 24h)/Acute NRT gum
Questionnaires	Day of scan	Last alcohol consumption	Q.II.ALC	Alcohol	Alcohol (acute)/Alcohol (abstinence 24h)
Questionnaires	Day of scan	Last recreational drug consumption	Q.II.DRU	Amphetamines/Cannabis/Recreational opioids/Cocaine/Solvents and Inhalants/ MDMA & LSD/Psilocybin/ Barbiturates/Mescaline	Acute/Abstinence
Questionnaires	Day of scan	Hunger and thirst	Q.II.HUN	Hunger/Satiety/Fat intake/Sugar intake/ Thirst	Satiety (after hunger)/Fat intake/ Sugar intake/Thirst/Satiation (after thirst)
Questionnaires	Day of scan	Health	Q.II.HEA	Menstrual cycle/Pregnancy/Menopause	Menstrual cycle/Pregnancy/ Menopause/
Questionnaires	Day of scan	Sleep	Q.II.SLE	Drowsiness/Sleepiness	Drowsiness/Sleepiness
Questionnaires	Day of scan	Medication use	Q.II.MED	Medication	Medication (Acute)/(Abstinence short- term)
Measurements	During scan	Perfusion scan information	M.I.INF	Diurnal rhythm	Diurnal rhythm
Measurements	During scan	Wakefulness	M.I.WAK	Sleep/Drowsiness/Sleepiness	Wake-sleep transition/NREM/REM/ Waking up/Awakened/ Drowsiness/Sleepiness
Measurements	During scan	Mood	M.I.MOO	Mood/Arousal	Happy mood/Sad mood/Arousal
Measurements	During scan	Physiological measurements	M.I.PHY	Blood gases: O ₂ /Blood gases: CO ₂ / Heart rate/Respiratory rate/ Anxiety/Stress/Arousal	Hypercapnia/Hypocapnia/Hyperoxia/ Hypoxia/Heart rate/Respiratory rate/Stress/Arousal
Measurements	After scan	Body temperature/Blood pressure	M.II.BTP	Body temperature/Blood pressure	Hyperthermia/Fever/Normal range BT/ Hypothermia/Normal range BP/ Hypertension/Hypotension

Standard Operating Procedure for Perfusion Measurements and Arterial Spin Labeling (ASL)

Measurements	After scan	Blood sample	M.II.BLO	Hematocrit/Blood viscosity/Hemoglobin/ Fibrinogen/Blood glucose/Homocysteine/ Cholesterol/Ketone bodies/ADMA/ Free fatty acids/Other	Hct/Blood viscosity/Hb/ Fibrinogen/Hypocaemia/ Hyperglycaemia/ Circulating homocysteine/Total cholesterol/LDL/HDL/ Acute hyperketonemia/ADMA/ Free fatty acids/Acute concentration alcohol,nicotine,caffeine
Neuropsychology	/	SCL90	N.SCL	Pathology	Psychological problems / Psychopathology
Neuropsychology	/	Stroop test	N.STR	Cognitive capacity	Executive functioning (interference)
Neuropsychology	/	RBANS	N.RBA	Cognitive capacity	Memory (Immediate)/ Visuospatial/ Constructional/ Fluid Ability/Attention/ Memory (Delayed)
Neuropsychology	/	National adult reading test	N.NAR	IQ	IQ (premorbid)
Instructions	Session	Time of day	I.I.TOM	Diurnal Rhythm	Diurnal Rhythm
Instructions	Session	Scanner surroundings	I.I.SUR	Open/closed eyes/Mental activity	Lights/Mental activity
Instructions	Patient before	Restrictions	I.II.RES	Alcohol use/Caffeine use/Nicotine use/ Amphetamines/Cannabis/Recreational opioids/Cocaine/Solvents and Inhalants/ MDMA & LSD/Psilocybin/Barbiturates/ Mescaline/Medication/Mobile phone/ Hunger/Satiety/Fat intake/ Sugar intake/Thirst/Physical exercise	Acute/Abstinence Medication (acute/abstinence)/ Mobile phone (after use – resting)/ Satiety (after hunger)/Fat intake/ Thirst/Satiation after thirst/ Sugar intake/Physical exercise (after)
Instructions	Patient during	Eyes	I.III.EYE	Open/closed eyes	Open eyes
Instructions	Patient during	Movement	I.III.MOV	Physical exercise/training	Physical exercise (during)
Instructions	Patient during	Resting state	I.III.RST	Mental activity	Mental activity
Instructions	Patient during	Wakefulness	I.III.WAK	Sleep/Drowsiness/Sleepiness	NREM/REM/sleep-wake transition/ waking up/awakened/ drowsiness/sleepiness

1. Questionnaires (Q)







The category *Questionnaires* can be subdivided into two subcategories:

- I. **General information:** this subcategory includes questions regarding the general lifestyle and personal information of the patient and can be completed **during the days before the scan session at home**. This part of the questionnaire should evidently be completed only once during a longitudinal study, but should be re-evaluated when the study duration exceeds several months. Perfusion modifiers such as caffeine use, diet, job, sports, handedness and personality are included in this subcategory.
- II. **Day of scan:** this subcategory queries specific patient information regarding the day of the scan session and should be completed **immediately before or after each perfusion scan** session.

I. General information

a. Personal details

Q.I.PER

Questions	Modifier	MS aspect	Colour
<i>Date of birth</i>	Age	Age	
<i>Gender</i>	Gender	Gender	
<i>Height/weight</i>	BMI	BMI	
<i>Height/weight</i>	BMI	Overweight	
<i>MRI examination</i>	Stress	Stress	
<i>Country of birth / mother tongue¹</i>	IQ/cognitive capacity ¹	IQ/cognition ¹	

¹ Querying the mother tongue is required when including the perfusion modifiers IQ and cognition as this information is often required when using neuropsychological tests.

b. Family and social life*

Q.I.SOC

Questions	Modifier	MS aspect	Colour
<i>Family situation/children</i>	Social environment	Social environment	○
<i>UCLA loneliness scale v.3*</i>	Social environment*	Social environment*	○

SOP-component specific reference – UCLA loneliness scale version 3:

Russell, D. (1996). UCLA Loneliness Scale (Version 3): Reliability, validity, and factor structure. *Journal of Personality Assessment*, 66, 20-40.

SOP-component scoring form – UCLA loneliness scale version 3*:

Supplementary files: Scoring – Q.I.SOC*

c. Education level

Q.I.EDU

Questions	Modifier	MS aspect	Colour
<i>Education level</i>	Education level	Education level	●
<i>Education field</i>	Education level	Education level	●

The SOP-component is based on the *International Standard Classification of Education 2011* (Educational level) and the *ISCED fields of education and training 2013 (ISCED-F 2013) manual* (Education field) developed by the United Nations Educational, Scientific and Cultural Organization (UNESCO). It is advised to use this standard classification system in order to properly and consequently interpret the results from this SOP component, especially when implemented in multi-centre studies. Each question is supplemented by general information about each education level and field. These information boxes can be adapted by the researcher based on their own national educational system in order to aid the patients with completing the questionnaire.



SOP-component specific reference – International Standard Classification of Education:

United Nations Educational, Scientific and Cultural Organisation, UNESCO Institute for Statistics. *International Standard Classification of Education ISCED 2011*. UIS/2012/INS/10/REV. (2012), available from <http://www.uis.unesco.org/Education/Documents/isced-2011-en.pdf>.

United Nations Educational, Scientific and Cultural Organisation, UNESCO Institute for Statistics. *ISCED fields of education and training 2013 (ISCED-F 2013): manual to accompany the International Standard Classification of Education 2011*. UIS/2014/INS/4 REV. (2014), available from <http://unesdoc.unesco.org/images/0022/002280/228085e.pdf>.




d. Professional life

Q.I.JOB





Questions	Modifier	MS aspect	Colour
<i>Profession</i>	Occupation	Occupation (current/past)	
<i>Volatile substances (professional contact)</i>	Solvents and Inhalants	Solvents and Inhalant (chronic)	

e. Hobbies


Q.I.HOB

Questions	Modifier	MS aspect	Colour
<i>Hobbies (social)</i>	Social environment	Social environment	
<i>Hobbies (creative)</i>	Creativity	Creativity	
<i>Hobbies (mental)</i>	Cognitive capacity	Cognitive capacity	

f. Sports

Questions	Modifier	MS aspect	Colour
<i>General sports routine (current and past)</i>	Physical exercise/training	Active lifestyle	
<i>Competition/top class sports</i>	Physical exercise/training	Physical training	
<i>Mountain sports</i>	Altitude	Climbers	
<i>Diving</i>	Diving	Divers/ Former divers	

*g. Handedness**

Questions	Modifier	MS aspect	Colour
<i>Edinburgh Handedness Inventory</i>	Handedness	Handedness	



SOP-component specific reference – Edinburgh Handedness Inventory:

Oldfield RC. The assessment and analysis of handedness: the Edinburgh inventory. *Neuropsychologia* 1971;9(1):97-113.

SOP-component scoring form – Edinburgh Handedness Inventory*:

Supplementary files: Scoring – Q.I.HAN*

h. Personality*

Questions	Modifier	MS aspect	Colour
<i>The Big Five Inventory</i>	Personality	Extraversion/Introversion	
<i>The Big Five Inventory</i>	Personality	Personality traits	

SOP-component specific reference – Big Five Inventory:

John OP, Donahue EM, Kentle RL. The Big Five Inventory--Versions 4a and 54. University of California, Berkeley, Institute of Personality and Social Research 1991.




John OP, Naumann LP, Soto CJ. Paradigm shift to the integrative Big Five trait taxonomy: History, measurement, and conceptual issues. In OP John, R W Robins, & L A Pervin (Eds), Handbook of personality: Theory and research (pp 114-158) New York, NY: Guilford Press 2008.

Benet-Martinez V, John OP. Los Cinco Grandes across cultures and ethnic groups: Multitrait multimethod analyses of the Big Five in Spanish and English. Journal of Personality and Social Psychology 1998;75:729-750.

SOP-component scoring form – Big Five Inventory*:

Supplementary files: Scoring – Q.I.PER*





i. Caffeine consumption*

Questions	Modifier	MS aspect	Colour
<i>Current caffeine consumption</i>	Caffeine	Caffeine (chronic)	
<i>Changes in caffeine consumption</i>	Caffeine	Caffeine (Abstinence)	
<i>Consumption energy drinks</i>	Energy drinks	Energy drinks	

SOP-component scoring form – Caffeine consumption*:

Supplementary files: Scoring – Q.I.CAF*

j. Nicotine consumption*

Questions	Modifier	MS aspect	Colour
<i>Series A/B</i>	Nicotine	Nicotine (chronic)	
<i>Series C</i>	Nicotine	Former smoker	
<i>Series D</i>	Nicotine	Nicotine (chronic)	
<i>Series D</i>	Nicotine	Former smoker	



SOP-component specific reference – Fagerström Test for Nicotine Dependence:

Heatherton TF, Kozlowski LT, Frecker RC, Fagerstrom KO. The Fagerstrom Test for Nicotine Dependence: a revision of the Fagerstrom Tolerance Questionnaire. British journal of addiction 1991;86(9):1119-1127.

SOP-component scoring form – Nicotine consumption*:

Supplementary files: Scoring – Q.I.NIC*
















k. Alcohol consumption*

Questions	Modifier	MS aspect	Colour
<i>Series A/B</i>	Alcohol	Alcohol (chronic)	
<i>Series C</i>	Alcohol	Alcohol (abstinence long-term)	


SOP-component scoring form – Alcohol consumption*:

Supplementary files: Scoring – Q.I.ALC*





1. Recreational drug consumption

Questions	Modifier	MS aspect	Colour
<i>Drug A</i>	Cannabis	Cannabis (chronic)/ Cannabis (abstinence)	
<i>Drug B</i>	Cocaine	Cocaine (chronic)	
<i>Drug B</i>	Cocaine	Cocaine (former user 6 mo)/ Cocaine (abstinence/former user > 1yr)	
<i>Drug C</i>	Amphetamines	Amphetamines (chronic)	
<i>Drug C</i>	Amphetamines	Amphetamines (abstinence)	
<i>Drug D</i>	Recreational opioids	Recreational opioids (chronic)	
<i>Drug D</i>	Recreational opioids	Recreational opioids (abstinence)	
<i>Drug E</i>	MDMA & LSD	MDMA (chronic)	
<i>Drug E</i>	MDMA & LSD	MDMA (abstinence)	
<i>Drug F</i>	Mescaline	Mescaline	
<i>Drug G</i>	MDMA & LSD	LSD	
<i>Drug H</i>	Psilocybin	Psilocybin (chronic)/ Psilocybin (abstinence)	
<i>Drug I</i>	Solvents and Inhalants	Solvents and Inhalants (chronic)	
<i>Drug I</i>	Solvents and Inhalants	Solvents and Inhalants (abstinence)	
<i>Drug J</i>	Barbiturates	Barbiturates	


m. Diet

Questions	Modifier	MS aspect	Colour
<i>Diet</i>	Nutritional diet	High nitrate diet/ Fasting (Ramadan)	

n. Health

Questions	Modifier	MS aspect	Colour
<i>Pathology</i>	Pathology	/	
<i>Claustrophobia</i>	Stress	Stress	
<i>Claustrophobia</i>	Anxiety	Anxiety (all)	
<i>Claustrophobia</i>	Anxiety	Anxiety (low → moderate/ moderate → high)	

o. Medication use

Questions	Modifier	MS aspect	Colour
<i>Medication</i>	Medication	Medacatin (chronic)/ Medication (past)	

!! As this SOP component can be rather confusing, especially for older patients, it is advised for the researcher to ask the patient to bring their regular medication to the scan session.

II. Day of scan

a. Mood

Q.II.MO

Questions	Modifier	MS aspect	Colour
<i>PANAS-X</i>	Mood	Happy mood/Sad mood	○
<i>PANAS-X</i>	Mood	Disgust/Worry/Anger	●
<i>PANAS-X</i>	Drowsiness/Sleepiness	Drowsiness/Sleepiness	●
<i>PANAS-X</i>	Mood	Other mood states	●
<i>How happy VAS</i>	Mood	Happy mood	○
<i>How sad VAS</i>	Mood	Sad mood	○
<i>How aroused VAS</i>	Arousal	Arousal	○

SOP-component specific reference – Positive and Negative Affect Schedule - Expanded:

Watson D, Clark LA. The PANAS-X, Manual for the Positive and Negative Affect Schedule-Expanded form. Unpublished 1999;University of Iowa.

SOP-component scoring form – Mood*:




Supplementary files: Scoring – Q.II.MOO*

Q.II.CAF




b. Extreme sports

Questions	Modifier	MS aspect	Colour
<i>Climbing/Skiing</i>	Altitude	Back after high altitude	●
<i>Diving</i>	Diving	Back after diving	●



c. Last caffeine consumption

Questions	Modifier	MS aspect	Colour
<i>Today</i>	Caffeine	Caffeine (acute)	
<i>Yesterday</i>	Caffeine	Caffeine (abstinence)	
<i>Yesterday/today</i>	Energy drinks	Energy drinks	

d. Last nicotine consumption

















Questions	Modifier	MS aspect	Colour
<i>Today</i>	Nicotine	Nicotine (acute)	
<i>Yesterday</i>	Nicotine	Nicotine (abstinence 24h)	
<i>Yesterday/today</i>	Nicotine	Acute NRT gum	

e. Last alcohol consumption








Questions	Modifier	MS aspect	Colour
<i>Today</i>	Alcohol	Alcohol (acute)	
<i>Yesterday</i>	Alcohol	Alcohol (abstinence 24h)	

f. Last recreational drugs consumption




Q.II.DRU

Questions	Modifier	MS aspect	Colour
<i>Previous month</i>	Amphetamines	Amphetamines (acute)	
<i>Previous month</i>	Amphetamines	Amphetamines (abstinence)	
<i>Previous month</i>	Cannabis	Cannabis (acute)	
<i>Previous month</i>	Cannabis	Cannabis (abstinence)	
<i>Previous month</i>	Recreational opioids	Recreational opioids (acute)/(abstinence)	
<i>Previous month</i>	Cocaine	Cocaine (acute)	
<i>Previous month</i>	Cocaine	Cocaine (abstinence)	
<i>Previous month</i>	MDMA & LSD	LSD	
<i>Previous month</i>	Solvents and Inhalants	Solvents and Inhalants (acute)	
<i>Previous month</i>	Solvents and Inhalants	Solvents and Inhalants (abstinence)	
<i>Previous month</i>	Psilocybin	Psilocybin (acute)	
<i>Previous month</i>	Psilocybin	Psilocybin (abstinence)	
<i>Previous month</i>	MDMA & LSD	MDMA (acute)	
<i>Previous month</i>	MDMA & LSD	MDMA (abstinence)	
<i>Previous month</i>	Barbiturates	Barbiturates	
<i>Previous month</i>	Mescaline	Mescaline	


g. Hunger and thirst

Questions	Modifier	MS aspect	Colour
<i>Last meal</i>	Sugar intake	Sugar intake	
<i>Last meal</i>	Fat intake	Fat intake	
<i>Heaviness meal</i>	Hunger/Satiety	Satiety (after hunger)	
<i>Snack</i>	Sugar intake	Sugar intake	
<i>Snack</i>	Fat intake	Fat intake	
<i>Satisfaction meal</i>	Hunger/Satiety	Satiety (after hunger)	
<i>Thirst</i>	Thirst	Thirst/Satiation (after thirst)	

h. Health


Questions	Modifier	MS aspect	Colour
<i>Menstrual cycle</i>	Menstrual cycle	Menstrual cycle	
<i>Menstrual cycle</i>	Pregnancy	Pregnancy	
<i>Menstrual cycle</i>	Menopause	Menopause	

i. Sleep

Questions	Modifier	MS aspect	Colour
<i>All¹</i>	Drowsiness/Sleepiness	Drowsiness/Sleepiness	

¹ The answer provided by these questions indicates as well the susceptibility of the patient to fall asleep, which can influence cerebral perfusion significantly.

j. Medication use

Questions	Modifier	MS aspect	Colour
<i>Medication</i>	Medication	Medication (acute)/Medication (abstinence short-term)	

!! As this SOP component can be rather confusing, especially for older patients, it is advised for the researcher to ask the patient to bring the medication used during the days before the appointment to the scan session.

2. Measurements

The category *Measurements* can be subdivided into two subcategories:


- I. ***During the scan session:*** several parameters concerning the scan session (sequence and timing) and the patient (wakefulness, mood and physiological parameters) should be recorded during the scan session, immediately after the perfusion scan. **The information concerning those parameters are combined in only one file; the researcher can decide which SOP parameter should be taken into account for the study.**

- II. ***After the scan session:*** before or after the scan session, blood pressure and body temperature should be measured and a blood sample should be taken. **The information concerning those parameters are combined in only one file; the researcher can decide which SOP parameter should be taken into account for the study.**






I. During the scan session

a. Perfusion scan information

M.I.INF




Measurement	Modifier	MS aspect	Colour
<i>ASL sequence</i>	Technical variability		
<i>Time of scan</i>	Diurnal rhythm	Diurnal rhythm	

b. Wakefulness

Measurement	Modifier	MS aspect	Colour
<i>Wakefulness level</i>	Sleep	NREM	
<i>Wakefulness level</i>	Sleep	REM	
<i>Wakefulness level</i>	Sleep	Wake-sleep transition/waking up/awakened	
<i>Wakefulness level</i>	Drowsiness/sleepiness	Drowsiness/Sleepiness	
<i>Wakefulness level</i>	Stress	Stress	

A wakefulness score should be asked immediately before and after the perfusion scan for several reasons. First of all, this score can indicate the level of tiredness and stress of the patient, as well as the evolution hereof throughout the perfusion scan. Secondly, asking this question might wake the patients who might be dozing off during long scan sessions.







c. Mood

Measurement	Modifier	MS aspect	Colour
<i>How happy VAS</i>	Mood	Happy mood	
<i>How sad VAS</i>	Mood	Sad mood	
<i>How aroused VAS</i>	Arousal	Arousal	

Querying the mood-state immediately after the perfusion scan can be accomplished by utilising a visual analogue scale on a screen in the MRI-scanner, which is often used for functional MRI. MRI-compatible, fiber-optic response devices, such as a track ball, can be used to allow the patient to answer those questions.

Alternatively, in settings where such materials are not available, the researcher can verbally ask the score for each question immediately after the perfusion scan or present the patient with these visual analogue scales immediately after the scan session by reusing the VAS of SOP component Q.II.MOO.

d. Physiological measurements








Measurement	Modifier	MS aspect	Colour
<i>End-tidal CO₂</i>	Blood gases: CO ₂	Hypercapnia / Hypocapnia	
<i>Oxygen saturation</i>	Blood gases: O ₂	Hyperoxia / (Hypoxia)	
<i>Heart rate</i>	Heart rate	Heart rate	
<i>Respiratory rate</i>	Respiratory rate	Respiratory rate	
<i>Skin conductance</i>	Stress	Stress	
<i>Skin conductance</i>	Arousal	Arousal	

Measuring physiological parameters can obviously only be achieved by utilizing MRI-compatible monitoring (and recording) equipment. Multiple monitoring equipment packages are available on the market. In first instance, these parameters can be monitored to guarantee the normality of the values during the perfusion scan to exclude modifying effects on cerebral perfusion. When required, recording the physiological data during the perfusion scan may enable the use of this data as a regressor in more advanced perfusion data analyses.

II. After the scan session










a. Body temperature and blood pressure



M.II.BTP

Measurement	Modifier	MS aspect	Colour
<i>Body temperature</i>	Body temperature	Hyperthermia	
<i>Body temperature</i>	Body temperature	Fever	
<i>Body temperature</i>	Body temperature	Normal range	
<i>Body temperature</i>	Body temperature	Hypothermia	
<i>Blood pressure</i>	Blood pressure	Normal range	
<i>Blood pressure</i>	Blood pressure	Hypertension	
<i>Blood pressure</i>	Blood pressure	Hypotension	

b. Blood and urine sample

M.II.BTP

Measurement	Modifier	MS aspect	Colour
<i>Hematocrit</i>	Hematocrit	Hematocrit	
<i>Blood viscosity</i>	Blood viscosity	Blood viscosity	
<i>Hemoglobin</i>	Hemoglobin	Hemoglobin	
<i>Fibrinogen</i>	Fibrinogen	Fibrinogen	
<i>Blood glucose</i>	Blood glucose	Hypoglycaemia	
<i>Blood glucose</i>	Blood glucose	Hypoglycaemia	
<i>Circulating homocysteine</i>	Homocysteine	Circulating homocysteine	
<i>Cholesterol</i>	Cholesterol	Total/LDL/HDL	
<i>Ketone bodies (U)</i>	Ketone bodies	Acute hyperketonemia	

<i>ADMA</i>	ADMA	ADMA	
<i>Free fatty acids</i>	Free fatty acids	Free fatty acids	
<i>Other</i>	Alcohol/Nicotine/Caffeine	Acute concentration	

Obviously the research can select which blood and urine sample parameters might be interesting for the study. The majority of the parameters (except for haematocrit) will not modify brain perfusion between normal ranges, which means that collecting a blood sample in a healthy population might be unnecessary. In elderly or patients, including some of those parameters might be useful.

The SOP component M.II.BLO consists of a table which is adaptable by the researcher depending on the tests conducted. For each measure, the unit and reference values are included, however those values are based on the values used in the laboratory of the first author of this SOP. It is advised that the researcher using this SOP adapts the reference values to those used in their own lab.

Moreover, additional parameters can be measured in the blood and urine sample, such as the concentration of alcohol, nicotine, cotinine and caffeine, indicating the acute consumption of those products. However, the correlation between those concentration and cerebral perfusion are still rather inconsistent.²⁻⁶ Asking the subject about their last consumption (Q.II.CAF; Q.II.NIC; Q.II.ALC) might be more effective and cost-efficient.

In any case, it is advised to take haematocrit into account as the effects of this parameter can modify cerebral perfusion significantly (effect size category 1: >24%), even within normal ranges. This can be achieved either by collecting a blood sample, or by acquiring a blood T1 scan during the scan session which is likely to vary with haematocrit.⁷

3. Neuropsychology


The effects of neuropsychological aspects on cerebral perfusion is still limited and inconsistent. Additionally, the lack of standardized neuropsychological testing and the difficulty to test all domains of cognition complicates the inclusion of this aspect in the SOP. A consensus is needed on the choice of neuropsychological tests in order to define a specific phenotype. For instance, in the United States of America (USA), the National Institute of Health (NIH) toolbox sets an example of how neuropsychology can be standardized.⁸ Unfortunately, this framework is only validated in the USA for native English and Spanish speakers, despite ongoing efforts to translate this into other languages and cultures, including those of the European countries.

In order to test the most important major neuropsychological domains, it is recommended to choose a battery of neuropsychological tests assessing general cognition, memory, language, attention, verbal fluency, processing speed, executive function and visuospatial skills. In this SOP manual, several tests are suggested which cover the majority of those aspects. All tests included in this SOP are commercially available; country-specific scoring and norm values should be explored by the researcher.

Here we also recommend to rule out major psychiatric disorders.


a. Symptom Checklist-90-Revised (SCL90)

N.SCL

Neuropsychological test	Modifier	MS aspect	Colour
<i>SCL-90</i>	Pathology	Psychological problems / Psychopathology	





b. Stroop Test

N.STR

Neuropsychological test	Modifier	MS aspect	Colour
<i>Stroop test</i>	Cognitive capacity	Executive functioning (interference)	


c. RBANS (Repeatable Battery for the Assessment of Neuropsychological Status)

N.RBA

Neuropsychological test	Modifier	MS aspect	Colour
<i>List Learning / Story Memory</i>	Cognitive capacity	Memory (Immediate)	
<i>Figure Copy / Line Orientation</i>	Cognitive capacity	Visuospatial / Constructional	
<i>Picture Naming / Semantic Fluency</i>	Cognitive capacity	Fluid Ability	
<i>Digit Span / Coding</i>	Cognitive capacity	Attention	
<i>List Recall / List Recognition / Story Memory / Figure Recall</i>	Cognitive capacity	Memory (Delayed)	

d. National Adult Reading Test

N.NAR

Neuropsychological test	Modifier	MS aspect	Colour
<i>National Adult Reading Test</i>	IQ	IQ (Premorbid)	

4. Instructions

The category *Instructions* can be subdivided into three subcategories:


- I. **Session instructions:** this subcategory includes practical instructions about the scan session which the researcher should take into account when scanning cerebral perfusion.
- II. **Patient instructions before scan session:** some ‘do’s and don’ts’ should be instructed by the researcher to the patient a couple of days before the scan session.
- III. **Patient instructions during scan session:** at the start of the perfusion measurement, the researcher is advised to instruct the patient in an uniform manner, taking several perfusion modifiers into account.

Each SOP component file of this category includes **general advice** and a **checklist** to record if the instruction has been given. The column ‘**addition information**’ can be used to record irregularities or session- and patient-specific information. As an example: the researcher advised the subject not to perform heavy sports immediately before the scanning session. At arrival, the researcher notices that the patient is sweaty and panting due to the bike ride to the scanning facility. This information can be written down in the column ‘additional information’.

I. Session instructions



a. Time of day

I.I.TOM

Instruction	Modifier	MS aspect	Colour
<i>Time of day</i>	Diurnal rhythm	Diurnal rhythm	

b. Scanner surroundings








I.I.SUR

Instruction	Modifier	MS aspect	Colour
<i>Light out</i>	Open/closed eyes	Lights	
<i>Video/music</i>	Mental activity	Mental activity	

II. Patient instructions before scan session

a. Restrictions


I.II.RES

Instruction	Modifier	MS aspect	Colour
<i>Alcohol</i>	Alcohol	Alcohol (acute/abstinence 24h)	
<i>Recreational drugs</i>	Amphetamines/Cannabis/ Recreational opioids/ Cocaine/MDMA&LSD/ Solvents & Inhalants/ Psilocybin/ Barbiturates/Mescaline	Acute / Abstinence	
<i>Medication</i>	Medication	Medication (acute/abstinence)	
<i>Mobile phone</i>	Mobile phone	Mobile phone (after use – resting)	
<i>Foods and drinks</i>	Hunger/Satiety/Thirst	Satiety (after hunger)/ Thirst/Satiation after thirst	
<i>Foods and drinks</i>	Fat intake/Sugar intake	Fat intake/Sugar intake	
<i>Physical activity</i>	Physical exercise/training	Physical exercise (after)	

III. Patient instructions during scan session


a. Eyes

I.III.EYE

Instruction	Modifier	MS aspect	Colour
<i>Eyes</i>	Open/closed eyes	Open eyes	



b. Movement

I.III.MOV

Instruction	Modifier	MS aspect	Colour
<i>Movement</i>	Physical exercise/training	Physical exercise (during)	





c. Resting state

I.III.RST

Instruction	Modifier	MS aspect	Colour
<i>Resting state</i>	Mental activity	Mental activity	
<i>Resting state</i>	Yoga/Meditation	Meditation	

d. Wakefulness

I.III.WAK

Instruction	Modifier	MS aspect	Colour
<i>Sleep</i>	Sleep	NREM	
<i>Sleep</i>	Sleep	REM	
<i>Sleep</i>	Sleep	Wake-sleep transition/waking up/awakened	
<i>Sleep</i>	Drowsiness/Sleepiness	Drowsiness/Sleepiness	

Acknowledgments and contact info

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2. Conflicts of interest

The authors of this SOP and manual have no conflicts of interest to declare.

3. Contact information

For more information on the use of the standard operating procedure, please contact the developing researcher:

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Supplementary files: SOP documents

“Study title”

Goal

You are taking part in a study where “**short description of study objective (3 lines)**”.

In this part of the questionnaire, personal details will be queried (e.g. gender, weight, education, etc.) as well as your daily habits (e.g. alcohol, smoking, coffee, etc.). If you have any questions or something is not clear, please do not hesitate to ask the researcher about it on the day of your examination. This part of the questionnaire contains “**number**” questions.

Privacy

We assure you that the information obtained in this questionnaire is encoded (using a subject ID), just like the radiological images obtained during this study. This means that the information you provide cannot be used to identify you.

Subject ID: #####

Date of MRI scan: .../.../.....

Standard Operating Procedure for Perfusion Measurements and Arterial Spin Labeling (ASL)

Subject ID



Q.I.PER - Personal details

Date of birth: / /

Gender: Male Female

Height: cm

Weight: kg

Have you ever had an MRI examination? Yes No

In which country were you born?

In which country was your mother born?

In which country was your father born?

Is English your mother tongue? Yes No

If the answer to the previous question is "no":

When did you start speaking English (year)?

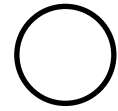
In what situations do you speak English?

Work

Family/Private

Both

Subject ID



Q.I.SOC - Family and social life

What is your current family situation?

- Single
 Cohabiting
 Married
 Divorced
 Widow/Widower

How many children do you have?

Some statements follow. For each statement, please indicate how often the statement is descriptive of you.

	Never	Rarely	Sometimes	Often
How often do you feel that you are "in tune" with the people around you?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
How often do you feel that you lack companionship?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
How often do you feel that there is no one you can turn to?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
How often do you feel alone?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
How often do you feel part of a group of friends?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
How often do you feel that you have a lot in common with the people around you?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
How often do you feel that you are no longer close to anyone?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
How often do you feel that your interests and ideas are not shared by those around you?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
How often do you feel outgoing and friendly?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
How often do you feel close to people?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
How often do you feel left out?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Standard Operating Procedure for Perfusion Measurements and Arterial Spin Labeling (ASL)



	Never	Rarely	Sometimes	Often
How often do you feel that your relationships with others are not meaningful?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
How often do you feel that no one really knows you well?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
How often do you feel isolated from others?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
How often do you feel you can find companionship when you want it?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
How often do you feel that there are people who really understand you?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
How often do you feel shy?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
How often do you feel that people are around you but not with you?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
How often do you feel that there are people you can talk to?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
How often do you feel that there are people you can turn to?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Subject ID



Q.I.EDU – Education level

What is your highest level of education? Check the box below for more information about the different levels of education. If your degree is not listed here, please specify under “Other”.

- Early childhood education – early childhood educational development
- Early childhood education – Pre-primary education
- Primary education
- Lower secondary education
- Higher secondary education
- Post-secondary non-tertiary education
- Short-cycle tertiary education
- Bachelor or equivalent
- Master or equivalent
- Doctoral or equivalent
- Other:

- **Early childhood education – early childhood educational development:** Education designed to support early development in preparation for participation in school and society. Programmes designed for children below the age of 3.
- **Early childhood education - pre-primary education:** Education designed to support early development in preparation for participation in school and society. Programmes designed for children from age 3 to the start of primary education
- **Primary education:** Programmes typically designed to provide students with fundamental skills in reading, writing and mathematics and to establish a solid foundation for learning.
- **Lower secondary education:** First stage of secondary education building on primary education, typically with a more subject-oriented curriculum
- **Upper secondary education:** Second/final stage of secondary education preparing for tertiary education and/or providing skills relevant to employment. Usually with an increased range of subject options and streams.
- **Post-secondary non-tertiary education:** Programmes providing learning experiences that build on secondary education and prepare for labour market entry and/or tertiary education. The content is broader than secondary but not as complex as tertiary education.
- **Short-cycle tertiary education:** Short first tertiary programmes that are typically practically-based, occupationally-specific and prepare for labour market entry. These programmes may also provide a pathway to other tertiary programmes.
- **Bachelor or equivalent:** Programmes designed to provide intermediate academic and/or professional knowledge, skills and competencies leading to a first tertiary degree or equivalent qualification.
- **Master or equivalent:** Programmes designed to provide advanced academic and/or professional knowledge, skills and competencies leading to a second tertiary degree or equivalent qualification.
- **Doctorate or equivalent:** Programmes designed primarily to lead to an advanced research qualification, usually concluding with the submission and defence of a substantive dissertation of publishable quality based on original research.

Standard Operating Procedure for Perfusion Measurements and Arterial Spin Labeling (ASL)



What field is your education primarily classified in? For this question, check the box below for more information.

- Generic programmes and qualifications
- Education
- Arts and humanities
- Social sciences, journalism and information
- Business, administration and law
- Natural sciences, mathematics and statistics
- Information and Communication Technologies
- Engineering, manufacturing and construction
- Agriculture, forestry, fisheries and veterinary
- Health and welfare
- Services

<ul style="list-style-type: none"> - Generic programmes and qualifications: <ul style="list-style-type: none"> o Basic programmes and qualifications o Literacy and numeracy o Personal skills and development - Education: - Arts and humanities: <ul style="list-style-type: none"> o Arts o Humanities o Languages - Social sciences, journalism and information <ul style="list-style-type: none"> o Social and behavioural sciences o Journalism and information - Business, administration and law - Natural sciences, mathematics and statistics <ul style="list-style-type: none"> o Biological and related sciences o Environment o Physical sciences o Mathematics and statistics 	<ul style="list-style-type: none"> - Information and Communication Technologies - Engineering, manufacturing and construction <ul style="list-style-type: none"> o Engineering and engineering trades o Manufacturing and processing o Architecture and construction - Agriculture, forestry, fisheries and veterinary - Health and welfare - Services <ul style="list-style-type: none"> o Personal services o Hygiene and occupational health services o Security services o Transport services
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Standard Operating Procedure for Perfusion Measurements and Arterial Spin Labeling (ASL)

Subject ID



Q.I.JOB – Professional life

Are you currently engaged in a profession? This pertains to your principal occupation.

- Yes → *Proceed to series B*
- No, I'm retired → *Proceed to series A*
- No, I'm a student → *Proceed to series A*
- No, I'm unemployed → *Proceed to series A*
- No, I'm a housewife/house husband → *Proceed to series A*
- No, I'm disabled → *Proceed to series A*

Series A

Were you previously engaged in a profession? Student jobs will not be considered.

- Yes → *Proceed to the next question*
- No → *Proceed to the next questionnaire*

You were engaged in this profession until when? Please provide the month and year.

Until / → *Proceed to series B*

Standard Operating Procedure for Perfusion Measurements and Arterial Spin Labeling (ASL)



Series B:

For these series, please focus on the profession you exerted throughout the longest part of your life.

Is/was your profession consistent with your highest level of education?

- Yes No

When did you start in this profession? Please provide the month and year.

Starting on _____ / _____

The profession you engage/engaged in, falls under which category?

- Senior executives, branch managers, managers
- Specialists in scientific professions
- Intermediate staff and technicians in scientific professions
- Administrative clerks
- Services and sales staff
- Farmers and skilled workers in agriculture and fisheries
- Skilled worker
- Factory workers, installations, machines and assembly operators
- Unqualified workers and clerks
- Military forces

You work/worked under which status? If you have worked under multiple statuses in this profession, choose the status under which you have worked the longest.

- Worker
- Employee
- Public servant
- Self-employed / Independent profession

Standard Operating Procedure for Perfusion Measurements and Arterial Spin Labeling (ASL)



You work/worked under which system? If you have worked under multiple systems in this profession, choose the system under which you have worked the longest.

- Day work
- Night work
- Shift work
- Weekend work

You work/worked under which system? If you have worked under multiple systems in this profession, choose the system under which you have worked the longest.

- Full-time
- Part-time (50%)
- 80%
- Other:

To what extent are/were you intellectually challenged in this profession?

(0 = not an intellectual challenge / 10 = a great intellectual challenge)

0	1	2	3	4	5	6	7	8	9	10
----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	-----------

To what extent are/were you physically or manually challenged in this profession?

(0 = not a physical/manual challenge / 10 = a great physical/manual challenge)

0	1	2	3	4	5	6	7	8	9	10
----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	-----------

To what extent are/were you socially challenged in this profession?

(0 = not a social challenge / 10 = a great social challenge)

0	1	2	3	4	5	6	7	8	9	10
----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	-----------

Standard Operating Procedure for Perfusion Measurements and Arterial Spin Labeling (ASL)



Do/did you come into regular contact with volatile substances such as paint, gasoline, glue, etc. for professional reasons?

Yes

→ *Proceed to the next question*

No

→ *Proceed to the next questionnaire*

In what year did you first come into regular contact with these substances?

.....

In what year did this stop?

.....

Subject ID



Q.I.HOB – Hobbies

What are your regular hobbies? You can tick more than one option.

- Sports
- Creative hobbies (e.g. art, woodwork, jewellery, clothing, etc.)
- Dramatic hobbies (e.g. music, drama, magic, etc.)
- Collecting (e.g. stamps, coins, etc.)
- Manual hobbies (e.g. gardening, do-it-yourself, models, building, etc.)
- Social hobbies (e.g. youth group, sports club, seniors club, etc.)
- Thinking hobbies (e.g. cards, crosswords, chess, etc.)
- Reading
- Cooking and baking
- I don't have any hobbies

How much time do you spend on a particular hobby in a typical week? How long have you practiced this hobby? Answer this question for each hobby you listed in the first question.

Hobby	Time (hours/wk)	Number of years	Hobby	Time (hours/wk)	Number of years
<i>Sports</i>			<i>Social</i>		
<i>Creative</i>			<i>Thinking</i>		
<i>Dramatic</i>			<i>Reading</i>		
<i>Collecting</i>			<i>Cooking and baking</i>		
<i>Manual</i>					

Subject ID



Q.I.SPO – Sports

On average, how often do you exercise each week? times a week

On average, for how long do you exercise in each session? minutes

Do you also compete in sports competitions? Yes No

Do you participate in top-class sports? Yes No

How long have you trained using this exercise routine? month year

Are you a frequent climber/do you frequently rescent at high altitudes? Yes No

Are you a frequent diver? Yes No

Has your routine changed **significantly** compared to the past?

*Note: “much more” and “much less” means a **significant** change in your exercise routine, for example, completely stopping although it used to be a regular habit. This does not include weekly fluctuations in frequency or duration, thus, it does not pertain to small changes in the routine, such as one extra sports session in the week.*

Please complete: “I currently exercise than in the past”

- | | |
|------------------------------------|-------------------------------------|
| <input type="checkbox"/> Much less | → Proceed to the next question |
| <input type="checkbox"/> Less | → Proceed to the next questionnaire |
| <input type="checkbox"/> The same | → Proceed to the next questionnaire |
| <input type="checkbox"/> More | → Proceed to the next questionnaire |
| <input type="checkbox"/> Much more | → Proceed to the next question |

In the previous question, you indicated that your exercise routine has changed “*much more*” or “*much less*” compared to the past.

On average, how often did you exercise each week? times a week

On average, for how long did you exercise each time? minutes

Did you also compete in sports competitions? Yes No

Did you participate in top-class sports? Yes No

How long had you trained using your previous sports routine? month year

Subject ID



Q.I.HAN – Handedness

Indicate your handedness by selecting the correct answer for the following activities. Only choose the “Always left” or “Always right” option if your preference is so strong that you would never use the other hand, unless absolutely forced to. For some activities, you need to use both hands. In these cases, we ask you to indicate your handedness for the object or activity in parentheses. Try to answer all of the questions and only leave one unselected if you’ve no experience with the task.

	Always right	Mostly right	No preference	Mostly left	Always left
Writing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Drawing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Throwing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Scissors	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Toothbrush	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Knife (without fork)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Spoon	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Broom (upper hand)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Striking a match (match)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Opening a box (lid)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Which foot do you prefer to kick with?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
If you use only one eye, which one?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Subject ID



Q.I.PER – Personality

Here are a number of characteristics that may or may not apply to you. For example, do you agree that you are someone who *likes to spend time with others*? Please indicate the extent to which you agree or disagree with that statement.

“I see myself as someone who...”

	Disagree strongly	Disagree a little	Neither agree, neither disagree	Agree a little	Agree strongly
Is talkative	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Tends to find fault with others	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Does a thorough job	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Is depressed, blue	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Is original, comes up with new ideas	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Is reserved	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Is helpful and unselfish with others	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Can be somewhat careless	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Is relaxed, handles stress well	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Is curious about many different things	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Is full of energy	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Starts quarrels with others	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Is a reliable worker	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Standard Operating Procedure for Perfusion Measurements and Arterial Spin Labeling (ASL)



	Disagree strongly	Disagree a little	Neither agree, neither disagree	Agree a little	Agree strongly
Can be tense	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Is ingenious, a deep thinker	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Generates a lot of enthusiasm	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Has a forgiving nature	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Tends to be disorganized	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Worries a lot	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Has an active imagination	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Tends to be quiet	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Is generally trusting	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Tends to be lazy	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Is emotionally stable, not easily upset	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Is inventive	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Has an assertive personality	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Can be cold and aloof	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Perseveres until the task is finished	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Can be moody	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Values artistic, aesthetic experiences	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Is sometimes shy, inhibited	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Standard Operating Procedure for Perfusion Measurements and Arterial Spin Labeling (ASL)



	Disagree strongly	Disagree a little	Neither agree, neither disagree	Agree a little	Agree strongly
Is considerate and kind to almost everyone	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Does things efficiently	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Remains calm in tense situations	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Prefers work that is routine	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Is outgoing, sociable	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Is sometimes rude to others	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Makes plans and follows through with them	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Gets nervous easily	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Likes to reflect, play with ideas	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Has few artistic interests	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Likes to cooperate with others	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Is easily distracted	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Is sophisticated in art, music, or literature	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Subject ID








Q.I.CAF – Caffeine consumption

CURRENT CAFFEINE CONSUMPTION

On average, how much of these caffeinated products do you consume in a single day?


Note: these drinks do not count:

- Caffeine-free coffee
- Caffeine-free tea
- Caffeine-free soft drink
- Herbal tea/ infusion: e.g. rose hip, chamomile, mint, nettle, rooibos, fruits, etc.

-  coffee: *ground coffee, latte, mocha latte, cappuccino*
-  espresso or instant coffee
-  tea: *green tea, black tea, white tea, Ice Tea*
-  Coca cola, Pepsi cola (*including light and zero variants*)
-  energy drink: *e.g. Red Bull, Nalu, Golden Power, Monster, Burn.*

!!! In the case of 500 ml cans (such as Burn and Monster),

please double the amount.

-  chocolate (*approx. 50 g, milk and black chocolate*) and
chocolate milk

CHANGES IN CAFFEINE CONSUMPTION

Has this habit changed **significantly** in the last three months?

*Note: “much more” and “much less” means a **significant** change in the habit of consuming caffeinated products, for example, completely stopping although it used to be a regular habit. Daily fluctuations (e.g. one more or one less cup of coffee or a piece of chocolate) are not included here.*

*Please complete: “I currently consume
caffeinated products than in the past”*

- | | |
|------------------------------------|-------------------------------------|
| <input type="checkbox"/> Much less | → Proceed to the next question |
| <input type="checkbox"/> Less | → Proceed to the next questionnaire |
| <input type="checkbox"/> The same | → Proceed to the next questionnaire |
| <input type="checkbox"/> More | → Proceed to the next questionnaire |
| <input type="checkbox"/> Much more | → Proceed to the next question |

In the previous question, you indicated that your caffeine consumption has changed “*much less*” or “*much more*” compared to the past. How long ago did this significant change in your caffeine consumption occur?






..... weeks days

Standard Operating Procedure for Perfusion Measurements and Arterial Spin Labeling (ASL)


On average, how many of these caffeinated products did you consume in one day **before this significant change**?

Note: these drinks do not count:

- Caffeine-free coffee
- Caffeine-free tea
- Caffeine-free soft drink
- Herbal tea/ infusion: e.g. rose hip, chamomile, mint, nettle, rooibos, fruits, etc.

-  coffee: *ground coffee, latte, mocha latte, cappuccino*
-  espresso or instant coffee
-  tea: *green tea, black tea, white tea, Ice Tea*
-  Coca cola, Pepsi cola (*including light and zero variants*)
-  energy drink: *e.g. Red Bull, Nalu, Golden Power, Monster, Burn.*

**!!! In the case of 500 ml cans (such as Burn and Monster),
please double the amount.**

-  chocolate (*approx. 50 g, milk and black chocolate*) and
chocolate milk

Subject ID



Q.I.NIC – Nicotine consumption

Do you smoke or use nicotine products; or have you ever smoked or used these nicotine products?

Note: nicotine products include nicotine patches, gum, inhaler, nose spray, mouth spray, lozenges and prescription bupropion hydrochloride.

No, I have never smoked or used nicotine products

→ *Proceed to the next questionnaire*

Yes, I smoke or use nicotine products

→ *Proceed to series A*

Yes, I have smoked or used nicotine product

→ *Proceed to series C*

Series A

In the previous question, you indicated that you currently smoke or use nicotine products.

This part asks about your current smoking habit.

Currently, how often do you smoke or use nicotine products?

Monthly or less

→ *Proceed to series B*

2-4x /month

→ *Proceed to the next question*

2-3x /week

→ *Proceed to the next question*

More than 4x /week

→ *Proceed to the next question*

Daily

→ *Proceed to the next question*

Standard Operating Procedure for Perfusion Measurements and Arterial Spin Labeling (ASL)



How much nicotine products do you usually smoke or use in one day? For each product you use, enter the amount per day and, if applicable, tick the dosage amount.

- cigarettes
- e-cigarette cartridges, dose:
 - 0 mg (0%) 24 mg (2.4%)
 - 6 mg (0.6%) 36 mg (3.6%)
 - 12 mg (1.2%) 48 mg (4.8%)
 - 18 mg (1.8%)
- cigars
- full pipes
- nicotine patch, dose:
 - 5-7 mg 25-35 mg
 - 10-14 mg 42 mg
 - 15-21 mg
- nicotine gum, dose:
 - 2 mg
 - 4 mg
- nicotine inhaler cartridges
- sprays of nicotine nose spray
- sprays of nicotine mouth spray
- nicotine lozenges, dose:
 - 1 mg 2 mg
 - 1.5 mg 4 mg

→ *Proceed to the next question*

Standard Operating Procedure for Perfusion Measurements and Arterial Spin Labeling (ASL)



How soon after waking do you smoke or use your first nicotine product?

- Within 5 minutes
- 5 – 30 minutes
- More than 30 minutes

Do you or would you find it difficult not to smoke or not use nicotine products in places where it is prohibited? For example, a church or a library where smoking is prohibited.

- Yes
- No

Which nicotine product would be most difficult for you to give up?

- The first at the start of the day, in the morning
- Another one during the day

Do you smoke or use nicotine products more frequently in the morning?

- Yes
- No

Do you smoke or use nicotine products even when you spend most of the day sick in bed?

- Yes
- No

→ *Proceed to series B*

Series B

How long have you had this habit of smoking or using nicotine products?

..... years months

→ *Proceed to series D*

Series C

In the previous question, you indicated that you currently do not smoke or use nicotine products, but you have done so throughout your life.

How long has it been since you stopped smoking or used nicotine products?

..... years months

→ *Proceed to series D*

Series D

In the first question, you indicated that you currently smoke or use nicotine products or have previously smoked or used nicotine products. This part asks about your habit of smoking and using these substances *throughout your entire life*.

In total, how many years have you smoked or used nicotine products? years

At what age did you start smoking or using nicotine products? years

On average throughout your life, how often do you smoke or use nicotine products?

- Monthly or less → *Proceed to the next questionnaire*
- 2-4x /month → *Proceed to the next question*
- 2-3x /week → *Proceed to the next question*
- More than 4x /week → *Proceed to the next question*
- Daily → *Proceed to the next question*

Throughout your life, how much nicotine products do you usually smoke or use in one day? For each product you use, enter the quantity per day and, if applicable, tick the dosage amount used.

- cigarettes
- e-cigarette cartridges, dose:
 - 0 mg (0%) 24 mg (2.4%)
 - 6 mg (0.6%) 36 mg (3.6%)
 - 12 mg (1.2%) 48 mg (4.8%)
 - 18 mg (1.8%)
- cigars
- full pipes

Standard Operating Procedure for Perfusion Measurements and Arterial Spin Labeling (ASL)

- nicotine patch, dose:
 - 5-7 mg 25-35 mg
 - 10-14 mg 42 mg
 - 15-21 mg
- nicotine gum, dose:
 - 2 mg
 - 4 mg
- nicotine inhaler cartridges
- sprays of nicotine nose spray
- sprays of nicotine mouth spray
- nicotine lozenges, dose:
 - 1 mg 2 mg
 - 1.5 mg 4 mg

Subject ID



Q.I.ALC – Alcohol consumption

Series A

In this section, your current alcohol consumption is queried.

Currently, how often do you drink alcoholic drinks?

- | | |
|--|---------------------------------------|
| <input type="checkbox"/> Never | → <i>Proceed to series B</i> |
| <input type="checkbox"/> Monthly or less | → <i>Proceed to series B</i> |
| <input type="checkbox"/> 2-4/month | → <i>Proceed to the next question</i> |
| <input type="checkbox"/> 2-3/week | → <i>Proceed to the next question</i> |
| <input type="checkbox"/> More than 4 /week | → <i>Proceed to the next question</i> |
| <input type="checkbox"/> Daily | → <i>Proceed to the next question</i> |

On days when you drink alcohol **currently**, what is the average number of glasses of alcohol that you drink **on that day**?

..... glasses:

- Beer (normal beers)
- Wine
- Port/sherry
- Liqueur
- Aperitifs (Passoa, Kir, etc.)
- Cognac
- Spirits/shots
- Jenever



..... cocktails:

- Mojito
- Margarita
- Gin and tonic
- Cosmopolitan
- Vodka Redbull
- ...



..... glasses of local beer:







- St. Bernardus
- Duvel
- Leffe
- West Vleteren



→ *Proceed to the next question*

Standard Operating Procedure for Perfusion Measurements and Arterial Spin Labeling (ASL)

How often have you (as a woman) drunk six or more units or (as a man) eight or more units on a single occasion in the past year?

Note: 1 unit =   
1.5 units =  
2.5 units = Local beers 

- Never
- Less than monthly
- Monthly
- Weekly
- Daily or almost daily

→ Proceed to series B

Series B

How long have you had this alcohol habit? months year

→ Proceed to series C

Series C

In this section, your alcohol consumption throughout your life is queried.

In total, how many years have you consumed alcohol, either in large or small quantities?

..... years

At what age did you start drinking alcoholic drinks? years

On average throughout your life, how often do you drink alcoholic drinks?

- Never → Proceed to the next questionnaire
- Monthly or less → Proceed to the next questionnaire
- 2-4/month → Proceed to the next question
- 2-3/week → Proceed to the next question
- More than 4 /week → Proceed to the next question
- Daily → Proceed to the next question

Standard Operating Procedure for Perfusion Measurements and Arterial Spin Labeling (ASL)

On average, on days when you drank alcohol **throughout your whole life**, how many glasses of alcohol did you drink **in one day**?

..... glasses:

- Beer (normal beers)
- Wine
- Port/sherry
- Liqueur
- Aperitifs (Passoa, Kir, etc.)
- Cognac
- Spirits/shots
- Jenever



..... cocktails:

- Mojito
- Margarita
- Gin and tonic
- Cosmopolitan
- Vodka Redbull
- ...



..... glasses of local beer:

- St. Bernardus
- Duvel
- Leffe
- West Vleteren



Subject ID



Q.I.DRU – Recreational drug consumption

Do you sometimes use one of these drugs or have you ever used these in the past? Medicinal use of one of these products does **not** apply here. You can tick more than one option.

- I do not use any of these drugs. → *Proceed to the next questionnaire*
- Cannabis/Marijuana/Weed → *Complete A on the table*
- Cocaine → *Complete B on the table*
- Amphetamines (excluding ecstasy) → *Complete C on the table*
- Opiates /Opioids (heroin, methadone, morphine, codeine, fentanyl, etc.) → *Complete D on the table*
- Ecstasy → *Complete E on the table*
- Mescaline → *Complete F on the table*
- LSD → *Complete G on in the table*
- Psilocybin/Mushrooms → *Complete H on the table*
- Inhalants, e.g. poppers, gasoline, glue, nitrous oxide, nitrites, etc. → *Complete I on the table*
- Barbiturates → *Complete J on the table*
- Other drugs: → *Complete K on in the table*

Standard Operating Procedure for Perfusion Measurements and Arterial Spin Labeling (ASL)

In the previous question, you indicated that you use one or more of the drugs or have used these in the past. We would like to ask some additional questions about this usage. To do this efficiently, please complete the table on the following page for the drugs (A-K) you identified in the first question. The exact questions (1-5) and possible answers are the same for each drug. A parenthesised answer code is provided that you can use to complete the table:

(1) At what age did you start using this drug? year

(2) Currently, how often do you use this drug?

- Never **(0)**
- Every 2 months or less **(1)**
- Monthly **(2)**
- 2-4 times per month **(3)**
- 2-3 times per week **(4)**
- 4 or more times per week **(5)**

(3) Has there been a **significant** change in your use of this drug compared to past usage?

*Note: "much more" and "much less" means a **significant** change, for example, completely stopping although it used to be a regular habit.*

*Please complete: "I currently consume this drug
..... than in the past"*

- Much less **(--)** → Proceed to the next question **(4 + 5)**
- Less **(-)** → Proceed to the next drug
- Just as much **(=)** → Proceed to the next drug
- More **(+)** → Proceed to the next drug
- Much more **(++)** → Proceed to the next question **(4 + 5)**

(4) At what age did your use of cannabis increase to your current usage? year

(5) How often did you use cannabis in the past?

- Never (0)
- Every 2 months or less (1)
- Monthly (2)
- 2-4 times per month (3)
- 2-3 times per week (4)
- 4 or more times per week (5)

Standard Operating Procedure for Perfusion Measurements and Arterial Spin Labeling (ASL)

	Recreational drug	Age started (1)	Frequency (2)	Significant change (3)	Age at change (4)	Previous frequency (5)
	<i>Answer code</i>	<i>Year</i>	<i>0 → 5</i>	<i>-- → ++</i>	<i>Year</i>	<i>0 → 5</i>
A	<i>Cannabis/Marijuana/weed</i>					
B	<i>Cocaine</i>					
C	<i>Amphetamines (excl. ecstasy)</i>					
D	<i>Opiates/Opioids</i>					
E	<i>Ecstasy</i>					
F	<i>Mescaline</i>					
G	<i>LSD</i>					
H	<i>Psilocybin/Mushrooms</i>					
I	<i>Inhalants</i>					
J	<i>Barbiturates</i>					
K	<i>Other:</i>					

Standard Operating Procedure for Perfusion Measurements and Arterial Spin Labeling (ASL)

Subject ID



Q.I.DIE – Diet

Are you on any of the following diets? If you on a special diet that is not listed, please specify it.

- I'm not on a diet
- Vegetarian/Vegan
- Weight control diet
 - Low calorie diet (e.g. Weight Watchers)
 - Low carb diet (e.g. Atkins diet)
 - Low-fat diet
 - Crash diet (e.g. 17 day diet, soup diet, etc.)
- Medical diet
 - Gluten-free diet
 - Low-salt diet
 - Ketogenic diet
 - Diabetic diet
 - Cholesterol lowering diet
 - Lactose-free diet
- I am on a different diet:

How many months have you been on the diet or may you not consume the listed foods or consume these to a limited extent? months

Subject ID



Q.I.HEA – Health

What diseases have you been diagnosed with? Please also specify the diseases.

Note: for this section, you can always ask the researcher for help.

- Brain and nervous system disorders:
- Cardiovascular diseases:
- Disorders of the blood:
- Disorders of the stomach and intestines:
- Respiratory disorders:
- Hormonal disorders:
- Gynaecological disorders:
- Diseases of the bladder and urinary tract:
- Bacterial or viral infection:
- Disorders of the immune system or allergy:
- Skin diseases or disorders of the senses:
- Skeletal disorders:
- Psychiatric disorders:
- Oncological diseases:
- Pain, fever, inflammation:
- Other:

Standard Operating Procedure for Perfusion Measurements and Arterial Spin Labeling (ASL)



Are you inclined towards claustrophobia or have you ever experienced a claustrophobic panic attack?

Yes

No

If you have any other relevant information not addressed in the above list, please indicate it here.

.....

.....

.....

.....

.....

.....

Standard Operating Procedure for Perfusion Measurements and Arterial Spin Labeling (ASL)

Subject ID



Q.I.MED – Medication use

Correctly completing the following tables is the task of the researcher in collaboration with the patient. This part consists of two sections:

- Medication/treatments that the patient is currently taking/undergoing on a **regular** basis
- Medication/treatments that the patient took/underwent on a **regular basis in the past**, but which the patient has now stopped

Complete each column per medication: brand name, product name, dose/strength, dosage form/administration, frequency/quantity, total daily dose, start (and end) date, and indication.

To complete this section as correctly as possible, it is recommended that you bring your frequently used medication with you on the day of the examination.

Standard Operating Procedure for Perfusion Measurements and Arterial Spin Labeling (ASL)



SERIES A - Current medication/treatments taken/undergone on a regular basis

#	Brand name	Product name	Dose / strength	Dosage form / Administration method	Frequency	Total/day Dose	Start date	Indication
<i>e.g.</i>	<i>Cozaar</i>	<i>Losartan potassium</i>	<i>50 mg</i>	<i>Oral</i>	<i>1x/day</i>	<i>50 mg</i>	<i>20/04/2015</i>	<i>High blood pressure</i>
1								
2								
3								
4								
5								
6								
7								
8								
9								
10								
11								
12								
13								
14								
15								
16								
17								

Standard Operating Procedure for Perfusion Measurements and Arterial Spin Labeling (ASL)



SERIES B - Past medication/treatments taken/undergone on a regular basis

#	Brand name	Product name	Dose / strength	Dosage form / Administration method	Frequency	Total/day Dose	Start date	End date	Indication
<i>e.g.</i>	<i>Cytosan</i>	<i>Cyclophosphamide</i>	<i>9 mg/kg</i>	<i>IV</i>	<i>Daily, 5 days</i>	<i>45 mg/kg</i>	<i>1/11/2014</i>	<i>5/11/2014</i>	<i>Lung cancer</i>
1									
2									
3									
4									
5									
6									
7									
8									
9									
10									
11									
12									
13									
14									
15									
16									
17									

“Study title”

Goal

You are taking part in a study where “**short description of study objective (3 lines)**”.

In this part of the questionnaire, you will be asked about your mood and consumptions during the previous and current day. If you have any questions or something is not clear, you can ask the researcher about it on the day of your examination. This part of the questionnaire contains “**number**” questions.

Privacy

We assure you that the information obtained in this questionnaire is encoded (using a subject ID), just like the radiological images obtained during this study. This means that the information you provide cannot be used to identify you.

Subject ID: #####

Date of MRI scan: .../.../.....

Subject ID



Q.II.MOO – Mood

This scale consists of a number of words and phrases that describe different feelings and emotions. Read each item and indicate to what extent you feel this way RIGHT NOW.

	Very slightly or not at all	A little	Moderately	Quite a bit	Extremely
Cheerful	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Disgust	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Attentive	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Bashful	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sluggish	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Daring	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Surprised	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Strong	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Scornful	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Relaxed	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Irritable	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Delighted	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Inspired	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Fearless	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Disgusted with self	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sad	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Standard Operating Procedure for Perfusion Measurements and Arterial Spin Labeling (ASL)



	Very slightly or not at all	A little	Moderately	Quite a bit	Extremely
Calm	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Afraid	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Tired	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Amazed	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Shaky	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Happy	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Timid	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Alone	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Alert	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Upset	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Angry	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Bold	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Blue	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Shy	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Active	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Guilty	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Joyful	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Nervous	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lonely	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sleepy	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Standard Operating Procedure for Perfusion Measurements and Arterial Spin Labeling (ASL)



	Very slightly or not at all	A little	Moderately	Quite a bit	Extremely
Excited	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Hostile	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Proud	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Jittery	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lively	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ashamed	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
At ease	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Scared	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Drowsy	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Angry at self	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Enthusiastic	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Downhearted	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sheepish	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Distressed	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Blameworthy	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Determined	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Frightened	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Astonished	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Interested	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

	Very slightly or not at all	A little	Moderately	Quite a bit	Extremely
Loathing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Confident	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Energetic	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Concentrating	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dissatisfied with self	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Answer the following questions by indicating how you feel on the bar.

How happy do you feel right now?

Neutral

 As happy as I can imagine

How sad do you feel right now?

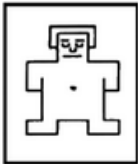
Neutral


 As sad as I can imagine

How aroused/emotionally stimulated do you feel right now?

Not at all

 Very much





Subject ID



Q.II.SPO – Extreme sports

SERIES A – HIGH ALTITUDE SPORTS

Did you recently reside at high altitude (e.g. climbing, winter sports, ...)?

Yes

→ *Proceed to the next question*

No

→ *Proceed to series B*

How long did you stay at high altitude?

How long ago did you return?

SERIES B – DIVING

Did you recently went diving?

Yes

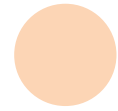
→ *Proceed to the next question*

No

→ *Proceed to the next questionnaire*

How long ago did you went diving?







Subject ID



Q.II.CAF – Last caffeine consumption

Yesterday and today, at what times you did you consume caffeine products? Please complete the table as specifically as possible with the time, amount (e.g. 2 cups, 1 can (250 ml), etc.) and the product.

Note: Caffeine products include:

-  *Coffee: ground coffee, latte, mocha latte, cappuccino, espresso, instant coffee)*
-  *Tea (green tea, black tea, white tea, Ice Tea)*
-  *Coca cola, Pepsi cola (including light and zero variants)*
-  *Energy drink (Red Bull, Nalu, Golden Power, Monster, Burn)*
-  *Chocolate (milk and dark chocolate)*
-  *Chocolate milk*

*This does **not** include:*

- *Caffeine-free coffee*
- *Caffeine-free tea*
- *Caffeine-free soft drink*
- *Herbal tea/infusion: e.g. Rose hip, chamomile, mint, nettle, rooibos, fruits, etc.*

For example

Time (hr:min)	Quantity	Product
07:30	2 cups	Ground coffee
09:45	1 cup	Green
12:15	1 glass	Coca Cola Zero
...

Standard Operating Procedure for Perfusion Measurements and Arterial Spin Labeling (ASL)



Yesterday

Time (hr:min)	Quantity	Product

Today

Time (hr:min)	Quantity	Product

Subject ID



Q.II.NIC – Last nicotine consumption

Yesterday and today, at what times you did you consume nicotine products? Please complete the table with the amount (e.g. 2, 1 inhalation, etc.), the product and the specifics (dose, brand name, etc.).

Note: Nicotine products include:

- Cigarettes, e-cigarettes
- Cigars, pipe
- Nicotine patch
- Nicotine gum
- Nicotine inhaler, nasal spray, mouth spray
- Nicotine lozenges

Note: Products with a nicotine dose of 0 mg must also be recorded.

For example

Time (hr:min)	Quantity	Product	Specifications
08:00	1	Cigarette	Marlboro Gold Original
10:00	1 inhalation	E-cigarette	V2 red tobacco Mint Tea 1.8%
10:25	1	Nicotine gum	Nicorette 2 mg
...

Standard Operating Procedure for Perfusion Measurements and Arterial Spin Labeling (ASL)



Yesterday

Time (hr:min)	Quantity	Product	Specifications

Today

Time (hr:min)	Quantity	Product	Specifications

Subject ID



Q.II.ALC – Last alcohol consumption

Yesterday and today, at what times you did you consume alcoholic products? Please complete the table with the time, amount and product.

For example

Time (hr:min)	Quantity	Product
20:00	1	Beer
20:30	2	Jenever shots
21:15	1	Gin and tonic
22:00	1	Ename Blond
...

Standard Operating Procedure for Perfusion Measurements and Arterial Spin Labeling (ASL)



Yesterday

Time (hr:min)	Quantity	Product

Today

Time (hr:min)	Quantity	Product

Subject ID



Q.II.DRU – Last recreational drug consumption

At what times in the past month have you taken drugs? Please complete the table below specifying the date, the estimated time, the amount and the product.

For example

Date	Time (hr:min)	Quantity	Product
30/04/2015	20:30	1 joint	Cannabis
05/05/2015	01:30	1 pint	Ecstasy
21/05/2015	16:00		Mushrooms
...

The previous month

Date	Time (hr:min)	Quantity	Product

Subject ID



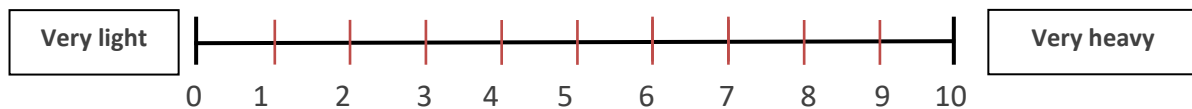
Q.II.HUN – Hunger and thirst

Today, at what time did you eat your last main meal? hr min

How heavy was your last meal?

Note:

0 = very light. 5 = a normal meal. 10 = very heavy.



Have you eaten a snack since that meal?

Yes

No

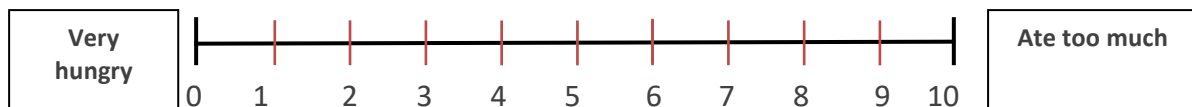
At what time did you eat this snack?

..... hr min

How satisfied were you with this last meal?

Note:

0 = I'm still very hungry. 5 = I'm satisfied. 10 = I ate too much.

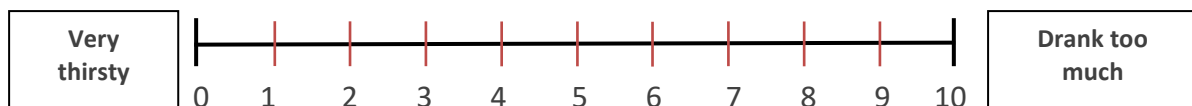


How thirsty are you right now?

Note:

0 = I'm not thirsty and my mouth is not dry.

10 = I've never been so thirsty and my mouth has never been as dry as it is now



Standard Operating Procedure for Perfusion Measurements and Arterial Spin Labeling (ASL)

Subject ID



Q.II.HEA – Health

Madam, where are you currently in your menstrual cycle? The first week starts on the first day of menstruation or the first day of your pill-free week.

- 1st week
- 2nd week
- 3rd week
- 4th week
- I don't menstruate because:

Subject ID



Q.II.SLE – Sleep

Answer the following questions by indicating how you feel on the bar.

How well did you slept last night?

I slept really badly	_____	I slept really well
----------------------	-------	---------------------

About how many hours sleep did you get last night? hours

How sleepy do you feel right now?

I do not feel sleepy at all	_____	I feel very sleepy
-----------------------------	-------	--------------------

Standard Operating Procedure for Perfusion Measurements and Arterial Spin Labeling (ASL)

Subject ID



Q.II.MED – Medication

Correctly completing the following tables is the task of the researcher in collaboration with the patient. In this part, medication that the patient has used in the past few days on a sporadic basis, such as painkillers or anti-inflammatories is queried.

Complete each column per medication: brand name, product name, dose/strength, dosage form/administration, frequency/quantity, total/day dose, start date, time and indication.

To complete this section as correctly as possible, it is recommended that you bring the medication used during the days before your appointment with you on the day of the examination.

Standard Operating Procedure for Perfusion Measurements and Arterial Spin Labeling (ASL)

Medication taken in the past few days (sporadically)

#	Brand name	Product name	Dose / strength	Dosage form / Administration method	Frequency	Total/day Dose	Start date	Time (hr:min)	Indication
<i>e.g.</i>	<i>Dafalgan</i>	<i>Paracetamol</i>	<i>500 mg</i>	<i>Oral</i>	<i>Two</i>	<i>1 g</i>	<i>30/04/2015</i>	<i>14:30</i>	<i>Headache</i>
1									
2									
3									
4									
5									
6									
7									
8									
9									
10									
11									
12									
13									
14									
15									
16									
17									

“Study title”

Goal

This questionnaire is part of a study in which “**short description of study objective (3 lines)**”.

This part of the questionnaire is meant for the researcher to record all measurements **during** the perfusion **scan session**.

Privacy

We assure that the information obtained in this questionnaire is encoded (using a subject ID), just like the radiological images obtained during this study. This means that the information you provide cannot be used to identify you.

Subject ID: #####

Date of MRI scan: .../.../.....

Subject ID

M.I.INF – Perfusion scan information

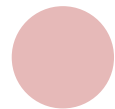


Perfusion sequence:

Time start perfusion scan: h min

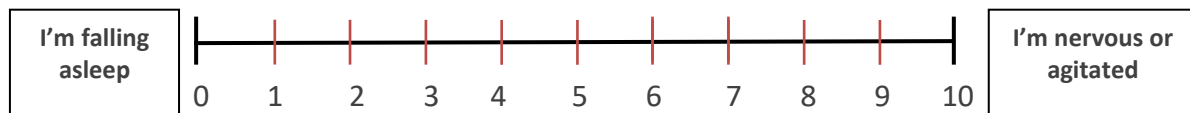
Duration perfusion scan: min s

M.I.WAK – Wakefulness



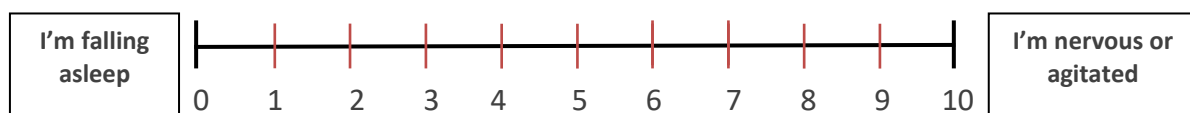
Wakefulness **before** the perfusion scan: ask the patient:

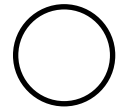
*'On a scale from 0 to 10, how awake are you right now?
0 means "I'm falling asleep, 10 means "I'm nervous or agitated",
5 means "I'm awake but not nervous"*



Wakefulness **after** the perfusion scan: ask the patient:

*'On a scale from 0 to 10, how awake are you right now?
0 means "I'm falling asleep, 10 means "I'm nervous or agitated",
5 means "I'm awake but not nervous"*





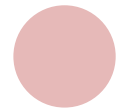
M.I.MOO – Mood

Score '*positive*':

Score '*positive*':

Score '*arousal*':

M.I.PHY – Physiological measurements



Measurement	Monitored	Recorded
<i>End-tidal CO2</i>	YES / NO	YES / NO
<i>Oxygen saturation</i>	YES / NO	YES / NO
<i>Heart rate</i>	YES / NO	YES / NO
<i>Respiratory rate</i>	YES / NO	YES / NO
<i>Skin conductance</i>	YES / NO	YES / NO

Subject ID

M.I.BTP – Body temperature and blood pressure

Body temperature: °C / °F

Blood pressure: / mmHg

M.I.BLO – Blood and urine sample

Measure	Value	Unit	Reference
BLOOD SAMPLE			
<i>Hematocrit</i>		%	♀35.8-43.7/♂39.0-49.7
<i>Whole blood viscosity</i>		cP (mPa.s)	
<i>Hemoglobin</i>		g/dl	♀11.8-14.8/♂12.9-17.3
<i>Fibrinogen</i>		Mg/dl	200-400
<i>Blood glucose</i>		Mg/dl	74-106
<i>Circulating homocysteine</i>		µmol/l	<12
<i>Total cholesterol</i>		Mg/dl	<190
<i>LDL</i>		Mg/dl	<110
<i>HDL</i>		Mg/dl	♀39-96 / ♂32-72
<i>ADMA</i>		µmol/l	0.4-0.8
<i>Free fatty acid profile</i>			
URINE SAMPLE			
<i>Ketone bodies</i>		Mg/dl	- / Trace / Small / Moderate / Large

Subject ID

I.I.TOM – Time of day



It is advised to scan the patients within one study during the same time of day if possible. This might especially be recommendable in longitudinal studies to avoid intra-subject variability caused by the diurnal rhythm.

Instruction	Taken into account?	Additional information (hr:min)
<i>Time of day</i>	<input type="checkbox"/> YES <input type="checkbox"/> NO	

I.I.SUR – Scanner surroundings



It is advised to turn off (or at least dim) the light both in the scanner room as in the magnet bore. Videos and music for patient comfort should be switched off. All possible distractions during the perfusion scan should be eliminated.

Instruction	Taken into account?	Additional information
<i>Lights scanner room</i>	<input type="checkbox"/> YES <input type="checkbox"/> NO	
<i>Lights magnet bore</i>	<input type="checkbox"/> YES <input type="checkbox"/> NO	
<i>Video</i>	<input type="checkbox"/> YES <input type="checkbox"/> NO	
<i>Music</i>	<input type="checkbox"/> YES <input type="checkbox"/> NO	
<i>Other distractions</i>	<input type="checkbox"/> YES <input type="checkbox"/> NO	

Subject ID

I.II.RES – Restrictions



In general, restricting daily life habits might induce extra variability due to withdrawal effects. For example, asking a patient to quit **medication**, is not only unethical, but withdrawal might influence cerebral perfusion. This counts for other lifestyle related factors, such as **caffeine, alcohol and nicotine** as well. However, it is advisable to recommend the patient to continue their daily life and habits, but to avoid circumstances inducing deviations from this pattern such as a student party the day before the scan session. Acute effects of those habits, are queried in multiple SOP components of Q.II.

For **recreational drugs**, the researcher can obviously point out that the use of such drugs in the days before the perfusion scan are not recommendable (except for studies including addiction patients).

Restrictions regarding **mobile phone** use is probably not necessary, however asking the subject not to take calls during the last 30 minutes before the start of the scan session might be advisable. As hunger and thirst can modify cerebral perfusion, it is advised to allow the subject to **eat and drink** before the scan session. Again, eating during the last 30 minutes before the start of the scan session might be recommendable.

Finally, it might be advisable to ask the patient not to perform **heavy physical activities** during the day of the scan session.

Instruction	Taken into account?	Additional information
<i>Alcohol</i>	<input type="checkbox"/> YES <input type="checkbox"/> NO	
<i>Recreational drugs</i>	<input type="checkbox"/> YES <input type="checkbox"/> NO	
<i>Caffeine</i>	<input type="checkbox"/> YES <input type="checkbox"/> NO	
<i>Nicotine</i>	<input type="checkbox"/> YES <input type="checkbox"/> NO	
<i>Medication</i>	<input type="checkbox"/> YES <input type="checkbox"/> NO	
<i>Mobile phone</i>	<input type="checkbox"/> YES <input type="checkbox"/> NO	
<i>Foods and drinks</i>	<input type="checkbox"/> YES <input type="checkbox"/> NO	
<i>Physical activity</i>	<input type="checkbox"/> YES <input type="checkbox"/> NO	

Subject ID

Instructing the patient in a uniform manner might reduce the variability caused by several modifiers. Moreover, this kind of communication often reassures the patient which might reduce stress effects as well.

Instruct the patient:

'For the next scan, I would like to ask you not to move, close your eyes, don't fall asleep and try not to think about anything specific. Just relax.'

I.III.EYE – Eyes

Instruction	Taken into account?	Additional information
<i>Closing eyes</i>	<input type="checkbox"/> YES <input type="checkbox"/> NO	

I.III.MOV – Movement

Instruction	Taken into account?	Additional information
<i>Don't move</i>	<input type="checkbox"/> YES <input type="checkbox"/> NO	

I.III.RST – Resting state

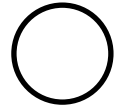
Instruction	Taken into account?	Additional information
<i>Don't think about anything specific. Just relax.</i>	<input type="checkbox"/> YES <input type="checkbox"/> NO	

I.III.WAK – Wakefulness

Instruction	Taken into account?	Additional information
<i>Don't sleep</i>	<input type="checkbox"/> YES <input type="checkbox"/> NO	

Supplementary files: Scoring

Subject ID



Q.I.SOC* - Scoring Sociaal Leven

UCLA Loneliness Scale Version 3

Scoring instructions:

Indicate the score for each statement: Never = 1; Rarely = 2; Sometimes = 3; Often = 4. The reverse score is already used for questions 1, 5, 6, 9, 10, 15, 16, 19 and 20.

Calculate the loneliness score by summing all statements scores.

	Never	Rarely	Someti mes	Often
How often do you feel that you are "in tune" with the people around you?	4	3	2	1
How often do you feel that you lack companionship?	1	2	3	4
How often do you feel that there is no one you can turn to?	1	2	3	4
How often do you feel alone?	1	2	3	4
How often do you feel part of a group of friends?	4	3	2	1
How often do you feel that you have a lot in common with the people around you?	4	3	2	1
How often do you feel that you are no longer close to anyone?	1	2	3	4
How often do you feel that your interests and ideas are not shared by those around you?	1	2	3	4
How often do you feel outgoing and friendly?	4	3	2	1
How often do you feel close to people?	4	3	2	1
How often do you feel left out?	1	2	3	4
How often do you feel that your relationships with others are not meaningful?	1	2	3	4
How often do you feel that no one really knows you well?	1	2	3	4
How often do you feel isolated from others?	1	2	3	4
How often do you feel you can find companionship when you want it?	4	3	2	1
How often do you feel that there are people who really understand you?	4	3	2	1
How often do you feel shy?	1	2	3	4
How often do you feel that people are around you but not with you?	1	2	3	4
How often do you feel that there are people you can talk to?	4	3	2	1
How often do you feel that there are people you can turn to?	4	3	2	1

Sum [20-80]

Subject ID



Q.I.HAN* - Handedness

The Edinburgh Inventory

Scoring instructions:

Indicate the score for each activity: Always right = 2; Mostly right = 1; No preference = 0; Mostly left = 1; Always left = 2.

Calculate the scores for the 'right' activities and the 'left' activities separately. Using the formula, the total score can be calculated.

	Always right	Mostly right	No preference	Mostly left	Always left
Writing	2	1	0	1	2
Drawing	2	1	0	1	2
Throwing	2	1	0	1	2
Scissors	2	1	0	1	2
Toothbrush	2	1	0	1	2
Knife (without fork)	2	1	0	1	2
Spoon	2	1	0	1	2
Broom (upper hand)	2	1	0	1	2
Striking a match (match)	2	1	0	1	2
Opening a box (lid)	2	1	0	1	2
Which foot do you prefer to kick with?	2	1	0	1	2
If you use only one eye, which one?	2	1	0	1	2

Score Right

Left

$$\text{Total score} = \frac{R-L}{R+L} \times 100 = \text{[]}$$

Pure left-handed = -1.0

Mixed left-handed = -0.5

Neutral = 0.0

Mixed right-handed = +0.5

Pure right-handed = +1.0

Subject ID



Q.I.PER* - Personality

The Big Five Inventory

Scoring instructions:

Indicate the score for each statement: Disagree strongly = 1; Disagree a little = 2; Neither agree, neither disagree = 3; Agree a little = 4; Agree strongly = 5. The reverse score is already used for questions 2, 6, 8, 9, 12, 18, 21, 23, 24, 27, 31, 34, 35, 37, 41 and 43.

Calculate the corresponding statement scores for each personality trait and fill in the table.

	Disagree strongly	Disagree a little	Neither agree, neither disagree	Agree a little	Agree strongly
Is talkative	1	2	3	4	5
Tends to find fault with others	5	4	3	2	1
Does a thorough job	1	2	3	4	5
Is depressed, blue	1	2	3	4	5
Is original, comes up with new ideas	1	2	3	4	5
Is reserved	5	4	3	2	1
Is helpful and unselfish with others	1	2	3	4	5
Can be somewhat careless	5	4	3	2	1
Is relaxed, handles stress well	5	4	3	2	1
Is curious about many different things	1	2	3	4	5
Is full of energy	1	2	3	4	5
Starts quarrels with others	5	4	3	2	1
Is a reliable worker	1	2	3	4	5
Can be tense	1	2	3	4	5
Is ingenious, a deep thinker	1	2	3	4	5
Generates a lot of enthusiasm	1	2	3	4	5
Has a forgiving nature	1	2	3	4	5
Tends to be disorganized	5	4	3	2	1
Worries a lot	1	2	3	4	5
Has an active imagination	1	2	3	4	5
Tends to be quiet	5	4	3	2	1
Is generally trusting	1	2	3	4	5
Tends to be lazy	5	4	3	2	1
Is emotionally stable, not easily upset	5	4	3	2	1

	Disagree strongly	Disagree a little	Neither agree, neither disagree	Agree a little	Agree strongly
Is inventive	1	2	3	4	5
Has an assertive personality	1	2	3	4	5
Can be cold and aloof	5	4	3	2	1
Perseveres until the task is finished	1	2	3	4	5
Can be moody	1	2	3	4	5
Values artistic, aesthetic experiences	1	2	3	4	5
Is sometimes shy, inhibited	5	4	3	2	1
Is considerate and kind to almost everyone	1	2	3	4	5
Does things efficiently	1	2	3	4	5
Remains calm in tense situations	5	4	3	2	1
Prefers work that is routine	5	4	3	2	1
Is outgoing, sociable	1	2	3	4	5
Is sometimes rude to others	5	4	3	2	1
Makes plans and follows through with them	1	2	3	4	5
Gets nervous easily	1	2	3	4	5
Likes to reflect, play with ideas	1	2	3	4	5
Has few artistic interests	5	4	3	2	1
Likes to cooperate with others	1	2	3	4	5
Is easily distracted	5	4	3	2	1
Is sophisticated in art, music, or literature	1	2	3	4	5

Personality trait	Sum of statement scores	Score
<i>Extraversion</i> [8-40]	1, 6, 11, 16, 21, 26, 31, 36	
<i>Agreeableness</i> [9-45]	2, 7, 12, 17, 22, 27, 32, 37, 42	
<i>Conscientiousness</i> [9-45]	3, 8, 13, 18, 23, 28, 33, 38, 43	
<i>Neuroticism</i> [8-40]	4, 9, 14, 19, 24, 29, 34, 39	
<i>Openness</i> [10-50]	5, 10, 15, 20, 25, 30, 35, 40, 41, 44	

Subject ID



Q.I.CAF* - Caffeine consumption

CURRENT CAFFEINE CONSUMPTION

Scoring instructions:

Calculate the daily dose of caffeine per kg of body weight consumed, using this table and the quantities given by the patient.

Product	Quantity	Dose (mg)	Total product dose (mg) = quantity x dose
Coffee		102	
Espresso/instant coffee		40	
Tea		27	
Coca Cola/Pepsi Cola		21	
Energy drink		73	
Chocolate/chocolate milk		12	

Total daily dose (mg) =

/

Body weight (kg) =

=

Daily dose per kg of body weight (mg/kg) =

CHANGES IN CAFFEINE CONSUMPTION

This section is important if the subject significantly changed their caffeine consumption habit in the past three months. This can lead to changes in perfusion (withdrawal effects or stronger acute effects). Normalisation (tolerance) is likely to be achieved after about two months.

Scoring instructions:

Calculate the daily dose of caffeine per kg of body weight consumed before the change, using this table and the quantities given by the patient.

Product	Quantity	Dose (mg)	Total product dose (mg) = quantity x dose
Coffee		102	
Espresso/instant coffee		40	
Tea		27	
Coca Cola/Pepsi Cola		21	
Energy drink		73	
Chocolate/chocolate milk		12	

Total daily dose (mg) =

/

Body weight (kg) =

=

Daily dose per kg of body weight (mg/kg) =

Subject ID



Q.I.NIC* - Nicotine consumption

CURRENT NICOTINE CONSUMPTION – SERIES A

Scoring instructions:

Calculate the total dose of nicotine consumed, using this table and the quantities and dose given by the patient. This should not be calculated for patient using nicotine on a monthly basis or less. Based on the frequency of use, the frequency parameter can be deducted. Use this parameter in combination with the total dose in order to calculate the total daily dose of nicotine consumption.

Product	Quantity	Dose (mg)	Total product dose (mg) = quantity x dose
Cigarettes		1	
E-cigarettes		0/6/12/18/24/36/48	
Cigars		5	
Pipe		5	
Plaster		7/14/21/35/42	
Gum		2/4	
Inhaler		15	
Nose spray		0.5	
Mouth spray		1	
Lozenges		1/1.5/2/4	

Frequency parameter

Monthly or less → *X*

2-4x / month → **10**

2-3x /weeks → **2.8**

More than 4x /week → **1.2**

Daily → **1**

Total dose (mg) =

/

Frequency parameter =

=

Total daily dose (mg) =

CURRENT NICOTINE CONSUMPTION – SERIES A

Fagerström Test for Nicotine Dependence

Scoring instructions:

Calculate the dependency score and level based on the scores of each questions. Calculate the answer for the last question based on the ‘total dose’ derived from the previous section.

How soon after waking do you smoke or use your first nicotine product?

- Within 5 minutes
- 5 – 30 minutes
- More than 30 minutes

Score
→ 3
→ 2
→ 1

Do you or would you find it difficult not to smoke or not use nicotine products in places where it is prohibited?
For example, a church or a library where smoking is prohibited.

- Yes
- No

Yes → 1
No → 0

Which nicotine product would be most difficult for you to give up?

- The first one at the start of the day, in the morning
- Another one during the day

→ 1
→ 0

Do you smoke or use nicotine products more frequently in the morning?

- Yes
- No

Yes → 1
No → 0

Do you smoke or use nicotine products even when you spend most of the day sick in bed?

- Yes
- No

Yes → 1
No → 0

Daily nicotine dose:

- Equal to or less than 10 mg
- 11-20 mg
- 21-30 mg
- 31 mg or more

→ 0
→ 1
→ 2
→ 3

Low dependency = 1 - 2
Low to moderate dependency = 3 - 4
Moderate dependency = 5 - 7
High dependency = 8 - 10

Sum [1-10]

--

LIFELONG NICOTINE CONSUMPTION – SERIES D

Scoring instructions:

Calculate the total dose of nicotine consumed, using this table and the quantities and dose given by the patient. This should not be calculated for patient using nicotine on a monthly basis or less. Based on the frequency of use, the frequency parameter can be deducted. Use this parameter in combination with the total dose in order to calculate the total daily dose of lifelong nicotine consumption. Multiply this by the duration of total nicotine use (♦) to calculate the nicotine index.

In total, how many years have you smoked or used nicotine products? years ♦

Product	Quantity	Dose (mg)	Total product dose (mg) = quantity x dose
Cigarettes		1	
E-cigarettes		0/6/12/18/24/36/48	
Cigars		5	
Pipe		5	
Plaster		7/14/21/35/42	
Gum		2/4	
Inhaler		15	
Nose spray		0.5	
Mouth spray		1	
Lozenges		1/1.5/2/4	

Frequency parameter
 Monthly or less → **X**
 2-4x / month → **10**
 2-3x / weeks → **2.8**
 More than 4x /week → **1.2**
 Daily → **1**

Total dose (mg) =

/

Frequency parameter =

=

Total daily dose (mg) =

X

Nicotine index =

Duration of total nicotine use ♦ =

(N.B. Pack year = nicotine index / 20)

Subject ID






Q.I.ALC* - Alcohol consumption

CURRENT ALCOHOL CONSUMPTION – SERIES A

Scoring instructions:

Calculate the current daily dose per kg of body weight of alcohol consumption based on the number of units of alcohol, frequency of use and body weight given by the patient.

	Units
	1
	1.5
	2.5

<i>Frequency parameter</i>
Never → <i>X</i>
Monthly or less → <i>X</i>
2-4x / month → 10
2-3x /weeks → 2.8
More than 4x /week → 1.2
Daily → 1

Number of units of alcohol =

/

Frequency of use =

=

Total number of units / day =

X

Dose of pure alcohol/unit (g) =

=

Total daily dose of alcohol (g) =

/

Body weight (kg) =

=




Daily dose per kg
of body weight (kg) =

LIFELONG ALCOHOL CONSUMPTION – SERIES C

Scoring instructions:

Calculate the alcohol index based on the number of units of alcohol, frequency of use and total duration of alcohol consumption (♦) given by the patient.

In total, how many years have you consumed alcohol, either in large or small quantities?
..... years ♦

	Units
	1
	1.5
	2.5

<i>Frequency parameter</i>
Never → X
Monthly or less → X
2-4x / month → 10
2-3x /weeks → 2.8
More than 4x /week → 1.2
Daily → 1

Number of units of alcohol =

/

Frequency of use =

=

Total number of units / day =

X

Dose of pure alcohol/unit (g) =

=

Total daily dose of alcohol (g) =

X

Total duration of alcohol consumption ♦ =

=

Alcohol index =

Subject ID



Q.II.MOO* - Mood

Positive and Negative Affect Schedule - Expanded

Scoring instructions:

Indicate the score for each statement: Very Slightly = 1; A little = 2; Moderately = 3; Quite a bit = 4; Extremely = 5. Complete the table for each mood state.

Mood factor	Sum of statement scores	Score
<i>General positive emotion</i> [10-50]	31 + 25 + 3 + 52 + 47 + 37 + 13 + 55 + 39 + 8	
<i>General negative emotion</i> [10-50]	18 + 44 + 34 + 40 + 11 + 38 + 32 + 42 + 26 + 50	
<i>Fear</i> [6-30]	18 + 44 + 53 + 34 + 40 + 21	
<i>Hostility</i> [6-30]	37 + 38 + 11 + 9 + 2 + 56	
<i>Guilt</i> [6-30]	32 + 42 + 51 + 46 + 15 + 60	
<i>Sadness</i> [5-25]	16 + 29 + 48 + 24 + 35	
<i>Joviality</i> [8-40]	22 + 33 + 12 + 1 + 37 + 47 + 41 + 58	
<i>Self-assurance</i> [6-30]	39 + 3 + 57 + 28 + 6 + 14	
<i>Attentiveness</i> [4-20]	25 + 3 + 59 + 52	
<i>Shyness</i> [4-20]	30 + 4 + 49 + 23	
<i>Fatigue</i> [4-20]	36 + 19 + 5 + 45	
<i>Serenity</i> [3-15]	17 + 10 + 43	
<i>Surprise</i> [3-15]	20 + 7 + 54	
<i>Basic positive affect</i> (<i>joviality + self-assurance + attentiveness</i>)/3 [6-30]	(22 + 33 + 12 + 1 + 37 + 47 + 41 + 58 + 39 + 3 + 57 + 28 + 6 + 14 + 25 + 3 + 59 + 52)/3	
<i>Basic negative affect</i> (<i>sadness + guilt + hostility + fear</i>)/4 [5, 75-28, 75]	(16 + 29 + 48 + 24 + 35 + 32 + 42 + 51 + 46 + 15 + 60 + 37 + 38 + 11 + 9 + 2 + 56 + 18 + 44 + 53 + 34 + 40 + 21)/4	

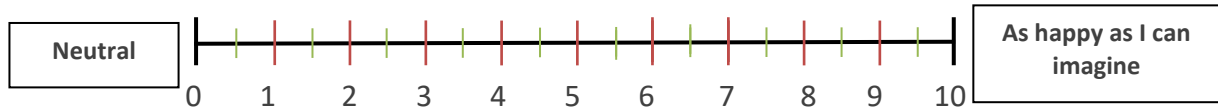
Q.II.MOO*

Visual Analogue Scale Mood

Scoring instructions:

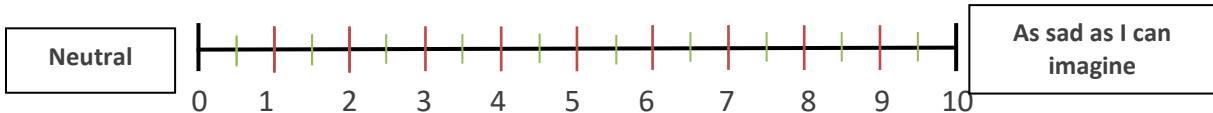
Measure the score for each VAS-scale using a ruler.

How happy do you feel right now?



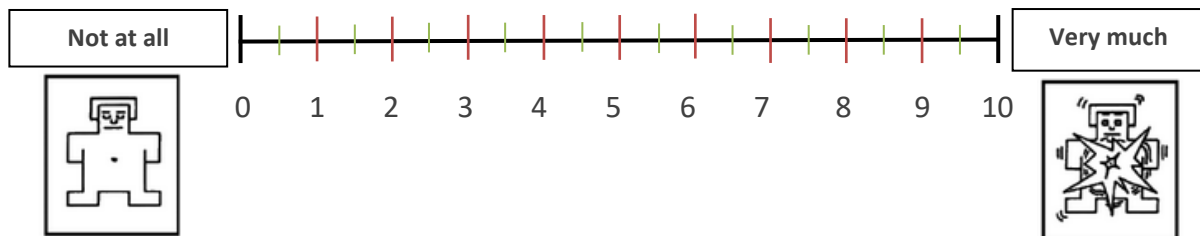
Score '**positive**':

How sad do you feel right now?



Score '**negative**':

How aroused/emotionally stimulated do you feel right now?



Score '**arousal**':