IHC- RORS9

"Improved health care in neurology and psychiatry – longer life"

1.Study Overview

This study, titled **IHC "Improved health care in neurology and psychiatry – longer life"**, is a 18-month prospective, observational, non-interventional study in patients with mild cognitive impairment (MCI) following ischemic strokes. The current trends in worldwide population ageing have drawn our attention not only to the quality of life in the elderly but also to the regression time towards old age-related dementia and other diseases connected to elderliness.

During the last century, particularly in the 90's, MCI has been described as a stage of memory disorders that went beyond normal ageing, characterised by no negative impact upon other cognitive area and by an almost intact preservation of daily routines. More recently, the MCI concept has been widened once with the clinical observation that no all patients with memory diseases will eventually develop Alzheimer's Disease (AD) or other dementias. Both the aetiology and the heterogeneous evolution of MCI are also described in the speciality literature. This study aims to observe the evolution of memory / cognitive disorders in patients with MCI following ischemic strokes.

Ischemic stroke is the most important cause of mortality and long-term incapacity for work in Europe, and implicitly in Romania. Consequently, ischemic strokes have a considerable social and economic impact. 75-80% of all strokes are ischemic, occurring after a focal vascular occlusion. Finding the exact aetiology of ischemic strokes contributes to the implementation of the proper therapy. Atherosclerosis is the main cause of ischemic strokes (30%). While CT scans and MRI scans allow an efficient and early differentiation between ischemic and hemorrhagic strokes, vascular imaging tests (such as extra / transcranial colour-coded Doppler ultrasound, digital subtraction angiography (DSA), CT angiography and/or MR angiography) provide valuable information on the permeability of cervical and intracranial arteries (stenosis, occlusions).

Vascular cognitive impairment is part of a heterogeneous group of cognitive disorders that all share a vascular cause. Dementia is one of the major causes of invalidity and dependence among the elderly worldwide. It is one of the diseases with significant negative impact not only upon patients, but also upon patients' families and caregivers. Dementia is characterised by a clinical syndrome represented by an overall cognitive impairment involving a considerable decline compared to the previous level of functionality and which gathers up a wide range of neurological and psychological symptoms. The cognitive functions that are basically affected by dementia are: memory, attention, temporal and spatial orientation, computation, written and spoken language, gnosis, praxis, learning skills, thinking and reasoning. Pathophysiological mechanisms of vascular cognitive impairment are still being investigated globally. Nowadays, the most plausible causes for vascular cognitive impairment are large-vessels disease correlated to small-vessels disease (including subcortical ischemic lacunar strokes, leucoaraiozis and athrophy).

Objectives of this project are described below:

1.) To identify patients with ischemic strokes and to outline the vascular risk factors and the hemodynamic and structural changes determined by such factors at the level of carotidal and / or vertebrobasilar arterial systems and the encephalon, which are correlated with cognitive impairment;

2.) To choose the battery of tests required to examine patients with ischemic strokes (NIHSS, Barthel Index, the modified Rankin scale) and vascular cognitive impairment (MMSE, MoCA, CDR, Delayed Recall Test- Rey Test, Hamilton rating scale for depression, FAQ, CGI) and to use such tests for early screening of cognitive impairment;

3.) To identify the stage from which patients with ischemic strokes and vascular cognitive impairment may be included in a relevant therapeutic management programme.

2. National and international situation at the level of both the field and the theme proposed

Ischemic strokes represent the third leading cause of mortality worldwide, after cardiovascular diseases and cancer. More 700 thousands ischemic strokes that lead to over 150 thousands deaths are identified in USA on an annual basis. Over 125.000 new episodes of ischemic strokes occur in France every year. The incidence of ischemic strokes increases exponentially with ages, affecting less than 1 in 1000 persons aged over 50 years and over 20 in 1000 persons aged over 80 years, every year. Ischemic strokes are seen as the leading cause of mortality and long-term incapacity for work in Europe, and implicitly in Romania, having at the same time a considerable social and economic impact. 75-80% of all strokes are ischemic, occurring after a focal vascular occlusion which causes the stoppage of oxygen and glucose supply to the corresponding encephalic area, which, in its turn, brings the disruption of all metabolic processes that usually take place in that particular area. Although the aetiology of ischemic strokes is heterogeneous, there are three main causes (atherosclerosis, cerebral lacunae and heart embolisms) which account for 2/3 of all cases (atherosclerosis is the main case in 30% of cases).

Statistics reveal that 0,5% of world population (*i.e. 35.6 millions*) was affected by dementia in 2010; according to scientists' estimates, this percentage will double by 2030 and by 2050, it will increase by three times. The same statistics report alarming data: 7.7 million new cases of dementia every year; a new case emerges every 4 second; 7.1 years - the estimated median survival from Alzheimer dementia's onset to death; 3.9 years - the estimated median survival from vascular dementia's onset to death; US $ 600 billion – annual costs incurred at the global level, equivalent to the budget of the 21st global economy, between Poland and Saudi Arabia; £ 23 billion incurred in UK, equal to the budget assigned for treating cancer (£ 12 billion), cardiovascular diseases (£ 8 billion) and strokes (£ 5 billion). On the other hand, the funds assigned for researches in the field of dementia are significantly lower than those allocated for researches targeting other diseases: from every million pounds assigned to cover the costs generated by diseases, only £ 5.000 are allocated for the study of dementia, almost £ 130.000 – for cancer, £ 75.000 – for cardiovascular diseases, £ 9.000 for strokes. It is obvious that more financial resources should be assigned for the researches conducted in the field of dementia. Accurate identification of all pathophysiological mechanisms will guarantee not only a proper treatment scheme, but also the control of this phenomenon which unfortunately has an exponential growth.

3. Objectives of this study

A total of 100 patients are estimated to enrol in this study. The leading target group of our study will be the patients with ischemic strokes from the Romanian-Serbian border area, particularly those living in Timis, Caras-Severin and Mehedinti Counties (in Romania). Ischemic strokes have a greater impact on the elderly.

The risk of having a stroke nearly doubles every 10 years after the age of 50 years. Although men are at higher risk of stroke, the overall number of women who actually suffer a stroke is higher because women usually live longer than men and therefore they are more prone to be affected by strokes. The average age of occurrence of ischemic stroke is 70 years in men and 75 years in women. However in Romania and Serbia, ischemic strokes occur earlier, between ages of 60 and 65 years. Our project is intended to bring its contribution not only to the improvement of the quality of life of this category of patients, by implementing new protocols that guarantee quicker and more accurate diagnosis of cognitive impairment in patients with ischemic strokes, but also to a better communication between the medical experts in both countries.

Several factors such as the socio-economic status, the geographic location, the lifestyle and the daily habits of the inhabitation from the Romanian-Serbian border area determine similar medical issues.

The protocols and techniques employed during the implementation of this project will also be used afterwards in all three institutions involved (University of Medicine and Pharmacy of Timisoara, the hospitals of Varset and Smederevo). Moreover, we will disseminate the results of this project to other similar establishments in Romania and Serbia. Another reason that supports the cross-border approach facilitated by this study is the fact that Romania, as an EU member state for several years, has access to certain cutting-edge medical technologies. After the completion of this project, students, residents and PhD students will be involved in order to acquire new practical and theoretical insights.

The main objective of this study consists in the identification of patients with ischemic strokes as well as in outlining both the vascular risk factors and the encephalic and hemodynamic structural changes these factors cause at the level of carotid and/or vertebrobasilar arterial levels, and which are best correlated with vascular cognitive impairment. During this 18-months study we will dynamically assess the primary neurological profile (motor deficit, objective sensory impairments, etc.) using the following scales: NIHSS, mRS, Barthel Index, on the one hand, and, on the other hand, all cognitive functions, employing the scales listed as follows: MMSE, MoCA, CDR, Delayed Recall Test- Rey Test, Hamilton rating scale for depression, FAQ, CGI.

Secondary objectives:

- To identify and underline several reliable, non-invasive and cost-friendly diagnosis methods that may be included in the standard battery tests for early screening of vascular cognitive impairment;
- To clearly determine the stage from which the patients with cognitive impairments may be included in a relevant therapeutic management programme.

Working hypotheses:

- Cognitive status depends on the normal function of both cerebral hemispheres which, in their turn, rely upon the cerebral blood flow which is highly influenced by the condition of the encephalic arterial system. According to the literature, the ageing process and the risk factors may be directly involved in the occurrence of cognitive impairment;
- A series of reliable, quick and cost-friendly paraclinical methods may reveal essential data regarding the structural and hemodynamic parameters of both the endocranial arteries and the arteries from the bottom of the neck (head and neck CT/MR angiography scans and extra / transcranial colour-coded Doppler ultrasounds).

Inclusion criteria:

- Female or male subjects over the age of 50 years;
- Memory disorders, ideally validated by a caregiver;

- Clinical analysis (particularly neurological analyses – rating scales used to assess focal neurological deficits, etc.) and imaging analysis (CT / MRI, transcranial colour-coded Doppler ultrasound scans);
- Examination of cognitive functions using various tests (MMSE, MoCA, clinical dementia rating scale (CDR), Rey Test, Hamilton rating scale for depression);
- In spite of the fact that the general cognitive function is basically preserved (CDR $\leq$ 0,5, MMSE $\geq$ 24), the patient shows signs of impairment of one or more cognitive fields, including memory;
- Mostly intact functional activities (normal FAQ scores);
- Subjects able to communicate (no Wernicke's aphasia; no global aphasia);
- No signs of dementia (patients do not meet the DSM-IV criteria related to dementia);
- The patients or the patients' legal caregivers must understand the purpose of this study and consequently sign the informed consent prior to carrying out any other study-related procedure and prior to collection of any study-related data).

Exclusion criteria:
- Diagnosis of a dependence syndrome (alcohol or drugs);
- Severe cardiovascular, respiratory, neurological, renal, hepatic, endocrinological, haematological comorbidities and basically any other unbalanced somatic diseases;
- History of malignity;
- Simultaneous participation in other studies.

4. Scientific presentation of project

Classification of ischemic strokes:

a) **atherothrombotic cerebral infarction (20%);**
b) **cardioembolic cerebral infarction (20%);**
c) **lacunar stroke (25%);**
d) **rare causes (arterial dissections, arteritis, vasospasms, prothrombotic state: protein S deficiency, protein C deficiency; antiphospholipid antibody syndrome, etc.) (5%);**
e) **cryptogenic stroke (30%);**

a. Atherothrombotic cerebral infarction.

This type of cerebral infarction comes as a consequence of atherosclerosis of either the extracranial arteries or the large intracranial arteries.

There are two main ways by means of which atherosclerosis may precipitate the occurrence of cerebral infarction:

- either as a consequence of the growth and progression of atheromatous plaque with the simultaneous occurrence of thrombosis and secondary injury of vascular lumen;
- or as a result of thromboembolism or fragmentation of plaque (arterio-arterial embolisms), including at the level of the aortic arch;

These patients report more frequently histories of transient ischemic attacks (TIA) and/or carotid bruits.

Clinical diagnosis of atherothrombotic cerebral infarction is based on the accurate identification of certain arterial stenosis or occlusions occurred due to the atherosclerotic processes, with one or more localisations. Atheromatous plaques are basically formed in certain areas of the cerebral arterial system, at the level of junctions and bifurcations characterized by swirling blood flows and vortices, such as: initial or final segments of the internal carotid artery (ICA), left subclavian pre-ostial artery. Atheromas are frequently formed in the initial segment of the middle cerebral artery (MCA), at the level of junction of vertebral arteries (VA) or at the level of bifurcation of the basilar artery (BA). White platelet thrombi are initially formed at the level of the atheromatous plaques. These white thrombi are known for their tendency to migrate causing the embolisation of arteries which usually occurs downstream (a short-term process characterized by a subsequent disaggregation of the emboli). Ulceration of atheromatous plaques causes the formation of larger and more adherent parietal thrombi. Sometime these red thrombi migrate as well, causing a long-term embolisation of downstream arteries which results in embolic strokes. Typically the parietal thrombi continue to further develop in situ, causing the complete occlusion of that particular artery and ultimately inducing the atherothrombotic cerebral infarction.

b.) Cardioembolic cerebral infarction

Typically, this type of infarction occurs unexpectedly, causing a sudden onset of focal neurological deficit that may progress. To accurately diagnose this infarction we need to clinically and/or paraclinically prove the cardiogenic source of the cerebral embolism. The most frequent cardiac diseases that may generate cerebral embolisms are: paroxysmal or permanent atrial fibrillation, atrial flutter, acute/chronic myocardial infarction (MI), cardiac failure and mitral and aortic valvulopathies. In relation to the paradoxical embolisms via the patent foramen ovale (resulted from cardiopathies with right-to-left shunts), the peripheral venous thrombosis is usually the source of embolus. Cardioembolic cerebral infarctions are essentially multiple infarcts, they may be associated with renal, mesenteric infarctions or with acute upper or lower limb ischemias. Sometimes CT scans may detect hemorrhagic infarctions.

c.) Lacunar stroke (Small-vessel stroke)

Although it is a morphopathological term, lacunar infarction is widely used in practice to indicate a category of minor lesions such as infarctions occurred due to occlusion of small penetrating arteries.

These arteries branch off almost at right angles from the main cerebral arteries and irrigate the white matter and the deep grey matter of both cerebral hemispheres and brain trunk. As they have few lateral connections, the thrombotic or embolic occlusion occurred at these levels causes infarcts in their limited distribution areas. Over time, the infarct takes the shape of a cyst filled with fluid. The infarction area is surrounded by normal tissue. The morphopathological substrate of cerebral lacunae is represented by the microangiopathy of intraparenchymal cerebral vessels, a process that usually occurs in hypertensive and/or diabetic patients.

CT scans indicate lesions smaller than <1,5 cm.

The clinical picture corresponds to the profile of multi-lacunar brain infarction or the Binswanger's arteriosclerotic encephalopathy. Cerebral "lacunae" are frequently asymptomatic.

Vascular dementia

Vascular dementia is represented by a heterogeneous group of diseases. Its progression/reversibility depends on several factors such as: the root causes that led to dementia, the pharmacologic treatment scheme and the psychological support provided to the patient. The variety of symptoms shown by patients with vascular dementia reflects the heterogeneity of pathophysiological processes as well as the number, size and the various locations of lesions. There has been reported that structural changes visible in CT / MRI scans are more complex in patients with the most risk factors.

Also, studies conducted over time have shown that the most common causes of vascular dementia are chiefly represented by: periventricular subcortical lacunar ischemic lesions, temporal lobe atrophy, vascular calcifications (a marker of endocranial atherosclerosis), etc. Vascular dementia is characterised by functional deactivation of cortex due to a certain number of cortical and subcortical lesions. The resulting disease profile is, in its turn, characterized by subcortical vascular dementia. This type of dementia is probably the most common and homogeneous type of vascular dementia.

The latest developments in the field of cerebral imaging technology are very useful to get an in-depth understanding of the association between dementia and the cerebrovascular disease.

The specific diagnosis and the pathophysiological importance of vascular lesions identified via imaging investigations validate the observations according to which that a large number of different (pathogenetic and morphological) combinations are in fact the basis of the clinical polymorphism of cerebrovascular diseases. Thus, the patient may experience changes in brain structures and active risk factors without any alterations in terms of his/her personality and affectivity and without presenting any cognitive decline, yet.

Vascular dementia is more common in men, especially prior to the age of 75 years, with gender difference decreasing after this age. Up to 75 years of age, the higher the age of the subjects, the more they are associated with a greater number of vascular lesions. After the age of 75 years, and in relation to the existing lesions, the role of vascular risk factors decreases and the age becomes a critical factor. The risk factors for vascular dementia have been extrapolated from vascular diseases, a valuable indication being that

the evolution of any cognitive impairment is progressive. This progressive evolution suggests that ischemic strokes actually initiate the development of dementia. The occurrence of extra/intracranial stenosis, as a consequence of vascular risk factors, may cause cerebral ischemic injuries and, implicitly, may trigger vascular dementia.

Neuropsychological tests are exact and precise tools to assess the clinical development and the cognitive impairment associated with vascular dementia (e.g. the higher the number of risk factors, the lower the MMSE score).

The suspicious of a probable diagnosis for vascular dementia may justify the performance of a cerebral CT / MRI scan, even if the patient experiences no cognitive decline that may be quantified using the standard neuropsychological tests (MMSE, Rey test, Hamilton scale, etc.). Vascular dementia is a form of dementia that, in some cases, can be prevented. Early stages of the disease (mild cognitive impairment-MCI) offer the opportunity to prevent, as much as possible, the development of dementia at various risk groups. Significant risk factors are: age, hypertension, diabetes, hyperlipidemia, etc.

Study methods

A total number of 4 visits will be conducted during the 18-months period assigned for this study. The first visit (known as the baseline visit) will be conducted at the time the patients enrol in this study, after having signed the relevant informed consents. The remaining three visits will be conducted every 6 months (+/- 2 weeks).

The following data will be collected during the evaluation of patients included in this study:

- Patients' demographic details and medical histories, including any concomitant treatment schemes, medication, etc.;
- Overall clinical examination, targeting all patients' systems;
- Exhaustive neurological examinations, documented by the application of several neurological rating scales (NIHSS, mRS, Barthel Index);
- Evaluation of cognitive functions will consist in the assessment of patients' short-term and long-term memory, attention, capacity to concentrate and focus, orientation, praxis, language and execution functions. There will be applied relevant tests to assess patients' cognitive functions as well as specific rating scales to evaluation depression which may mimic dementia or may be associated to a certain type of dementia. Consequently, the following tests and scales will be employed: M.M.S.E. (Mini Mental State Examination), MoCA (Montreal Cognitive Assessment), CDR (Clinical Dementia Rating Scale), Rey's test (Delayed recall test), Hamilton rating scale for depression, FAQ (Functional activity questionnaire) and CGI (Clinical global impression scale). The evaluation of cognitive functions by means of relevant neuropsychological tests is highly important for the diagnosis of MCI or dementia. The neuropsychological evaluation in conjunction with a thoroughgoing anamnesis and a complete clinical examination are extremely useful to differentiate cortical dementia (where memory loss, language and praxis impairment are predominant) from subcortical dementia (characterised by bradyphrenia and behavioural disorders involving structural alterations of personality).
- Structural neuroimaging investigations, such as encephalon CT / MRI scans are absolutely necessary. CT scans of the brain are very useful to exclude other cerebral pathologies, such as tumours, subdural hematomas, may be excluded, to determine the exact type of stroke (ischemic or hemorrhagic stroke) and also to diagnose the exact type of dementia (for example, in the case of vascular dementia, CT scans highlight not only the vascular lesions but also their exact types: lacunar strokes, strategic infarcts, etc.). MRI scans allow an accurate differentiation of the exact type of ischemic stroke (large-vessel disease vs. small-vessel disease), the specific area of the brain tissue which has been irreversible affected by infarction as well as the area of the brain tissue that has been functionally altered but which may be rescue (the penumbra ischemic area with "tissue at risk"). On the other hand, CT angiograms or MRA scans highlight a possible stenosis or occlusion of an extra / intracranial arterial trunk.

- Extra / transcranial colour-coded Doppler ultrasound provides relevant information about the permeability of cervical and cerebral vessels, outlining any possible stenosis or occlusions as well as the impairment of the cerebrovascular reserve (the arteriolar and capillary microcirculation) which may be associated with cognitive impairment.

Statistic analysis

Brief summary statistics (number, mean, standard deviation, median, minimal and maximal values) or frequencies of the data that has been collected will be presented. The comparisons between the values recorded on the date of enrolment in this study and the data recorded after 6, 12, and 18 months will be made using the Wilcoxon signed rank test or the Friedman's ANOVA test. The Stata software (ver. 15) will be used to conduct the relevant statistic evaluation.

Project relevance

The relevance of this study results not only from its scientific objectives (as described above) but also from the following aspects:

1.) enhancement of material and informational logistics in order to provide the relevant training and instruction of experts able to involve in proper multidisciplinary research activities;
2.) exploration of a primary area of clinical medicine and applicative research related to the study of cognitive impairments in patients with cerebrovascular pathology (ischemic strokes);
3.) collaboration with foreign research and healthcare centres and facilities (from Serbia) in connection to the theme approached herein;
4.) transfer of the findings and knowledge acquired in the field of applicative research to clinical medicine.

The main expected outcome of this project will be not only the identification and definition of a reliable algorithm to quickly diagnose the patients with vascular cognitive impairment occurred after ischemic strokes but also to determine the exact stage from which the patients with cognitive impairments may be included in relevant therapeutic management programmes. These measures will improve the quality of life of such patients and at the same time will reduce the already existing gaps compared to the EU patients.

By the end of this project we will have gathered up a valuable database that may be useful to students, registrars, senior house officers, specialist and consultant physicians as well as to doctoral students and the teaching staff to initiate and conduct related medical studies. The results we obtained under this project will not directly lead to profit but, after implementing the algorithm identified and formulated thanks to this study, the time required to set a diagnosis will be considerably reduced and more important, the quality of life of these patients will be improved.

Dissemination of the results of this study during conferences and publication thereof at the national level will help creating new theoretical databases intended to significantly contribute to the training of highly qualified experts in this multidisciplinary field of activity. Sharing the results of this project on the occasion of various international symposiums will allow a better understanding and an in-depth knowledge of the activity and preoccupations of our healthcare professionals.

Taking into consideration the technical aspect of this project, *i.e.* the medical expertise, our project team chose to use a dual approach in terms of promoting the project activities and outcomes. Therefore, the project will be presented in a particular way to the neurologists and psychiatrists who did not join the three teams who were directly involved in this study, and in a completely different manner to the wide public (including without limitation to patients and their relatives, the risk groups within the wide population and the healthy people).

On the one hand, by organizing symposiums, workshops, round tables, seminars, etc., we will create the opportunity to inform our peers from other healthcare institutions in the Romanian-Serbian cross-border area, about the achievements of our project team, giving them the possibility to use and continue the activities started under our project in their own healthcare institutions for the benefit of their patients. This

will create opportunities for new partnerships and new projects in other regions. By using the electronic health co-operation platform, we will be able to transfer the results and findings of our research, and, at the same time, we may also involve other medical and research institutions, facilitating thus a close and direct co-operation with our team

On the other hand, a coherent campaign focused on the clear and concise information of the wide public on the risks of stroke and dementia will include the preparation and distribution of brochures and flyers, particularly in rural areas, accompanied by a relevant awareness campaign in mass-media

Project Director,

Dragos Catalin Jianu, MD, PhD
Professor of Neurology
Senior consultant neurologist
Certificate in Neurovascular Ultrasound

IHC-RORS9 "Improved healthcare in neurology and psychiatry - longer life" (May 2017 – May 2019)

Visit	Visit 1	Visit 2	Visit 3	Visit 4
Assessment/Procedure	Baseline	6 months+/- 14 days	12 months +/- 14 days	18 months +/- 14 days
Informed consent	x			
Demographic data	x			
Eligibility criteria	x			
Medical history – Vital signs (pulse, BP)	x	x	x	x
Medical examination – Concomitant pathology	x	x	x	x
Neurological examination (NIHSS/mRS/ Barthel Index)	x	x	x	x
Laboratory data	x			
Medication	x	x	x	x
Brain structural imaging (CT/MRI)	x			
Extra and Transcranial Doppler or Trans-cranial color-coded duplex sonography	x		x	x
Amnestic MCI/ MCI diagnosis	x			
MMSE	x	x	x	x
MoCA	x	x	x	x
CDR	x			x
Delayed recall test (Rey probe)	x		x	x
FAQ	x			x
Hamilton Depression Scale	x			x
CGI Improvement scale	x			x

BP = Blood pressure, CT= Computer Tomography, MRI = Magnetic Resonance Imaging, MMSE= Mini Mental State Examination, MoCA = Montreal Cognitive Assessment, CDR = Clinical Dementia Rating – Scale, FAQ = Functional Activities Questionnaire, CGI – Clinical Global Impresion

NIH Stroke Scale		
Instructions	**Scale Definition**	**Score**
1a. Level of consciousness: The investigator must choose a response, even if a full evaluation is prevented by such obstacles as an endotracheal tube, language barrier, orotracheal trauma/bandages. A "3" is scored only if the patient makes no movement (other than reflexive posturing) in response to noxious stimulation.	0 = Alert; keenly responsive 1 = Not alert, but arousable by minor stimulation to obey, answer, or respond 2 = Not alert, requires repeated stimulation to attend, or is obtunded and requires strong or painful stimulation to make movements (not stereotyped) 3 = Responds only with reflex motor or autonomic effects or totally unresponsive, flaccid, areflexic	_____
1b. LOC Questions: The patient is asked the month and his/her age. The answer must be correct - there is no partial credit for being close. Aphasic and stuporous patients who do not comprehend the questions will score "2." Patients unable to speak because of endotracheal intubation, orotracheal trauma, severe dysarthia from any cause, language barrier or any other problem not secondary to aphasia are given a "1." **It is important that only the initial answer be graded and that the examiner not "help" the patient with verbal or non-verbal cues.**	0 = Answers both questions correctly 1 = Answers one question correctly 2 = Answers neither question correctly	_____
1c. LOC Commands: The patient is asked to open and close the eyes and then to grip and release the non-paretic hand. Substitute another one-step command if the hands cannot be used. Credit is given if an unequivocal attempt is made but not completed due to weakness**. If the patient does not respond to commands, the task should be demonstrated to them (pantomime)** and score the result (i.e., follows none, one or two commands). Patients with trauma, amputation, or other physical impediments should be given suitable one-step commands. Only the first attempt is scored.	0 = Performs both tasks correctly 1 = Performs one task correctly 2 = Performs neither task correctly	_____
2. Best Gaze: Only horizontal eye movements will be tested. Voluntary or reflexive (oculocephalic) eye movements will be scored but calorie testing is not done. If the patient has a conjugate deviation of the eyes that can be overcome by voluntary or reflexive activity, the score will be "1." If a patient has an isolated peripheral nerve paresis (CN, III, IV or VI) score a "1." Gaze is testable in all aphasic patients. Patients with ocular trauma, bandages, pre-existing blindness or other disorder of visual acuity or fields should be tested with reflexive movements and a choice made by the investigator. Establishing eyes contact and then moving about the patient from side to side will occasionally clarify the presence of a partial gaze palsy.	0 = Normal 1 = Partial gaze palsy. This score is given when gaze is abnormal in one or both eyes, but where forced deviation or total gaze paresis are not present 2 = Forced deviation, or total gaze paresis not overcome by the oculocephalic maneuver	_____
3. **Visual:** Visual fields (upper and lower quadrants) are tested by confrontation, using finger counting or visual threat as appropriate. Patient must be encouraged, but if they look at the side of the moving fingers appropriately, this can be scored as normal. If there is unilateral blindness or enucleation, visual fields in the remaining eye are scored. Score 1 only if a clear-cut asymmetry, including quadrant anopia is found. If patient is blind from any cause, score "3." Double simultaneous stimulation is performed at this point**. If there is extinction, patient receives a "1" and the results are used to answer question #11.**	0 = No visual loss 1 = Partial hemianopia 2 = Complete hemianopia 3 = Bilateral hemianopia (blind, including cortical blindness)	_____

NIH Stroke Scale - Continued

4. Facial Palsy: Ask, or use pantomime to encourage the patient to show teeth or raise eyebrows and close eyes. Score symmetry of grimace in response to noxious stimuli in the poorly responsive or non-comprehending patient. If facial trauma/bandages, orotracheal tube, tape or other physical barrier obscures the face, these should be removed to the extent possible.	0 = Normal symmetrical movement 1 = Minor paralysis (flattened nasolabial fold, asymmetry on smiling) 2 = Partial paralysis (total or near total paralysis of lower face) 3 = Complete paralysis of one or both sides (absence of facial movement in the upper and lower face)	_____
5 & 6. Motor Arm and Leg: The limb is placed in the appropriate position: extend the arms (palms down) 90 degrees (if sitting) or 45 degrees (if supine) and the leg 30 degrees (always tested supine). Drift is scored if the arm falls before 10 seconds or the leg before 5 seconds. The aphasic patient is encouraged using urgency in the voice and pantomime but not noxious stimulation. Each limb is tested in turn, beginning with the non-paretic arm. Only in the case of amputation or joint fusion at the shoulder or hip may the score be "9" and the examiner must clearly write the explanation for scoring as a "9".	0 = No drift, limb holds 90 (or 45) degrees for full 10 seconds 1 = Drift, Limb holds 90 (or 45) degrees, but drifts down before full 10 seconds; does not hit bed or other support 2 = Some effort against gravity, limb cannot get to or maintain (if cued) 90 (or 45) degrees, drifts down to bed, but has some effort against gravity 3 = No effort against gravity, limb falls 4 = No movement 9 = Amputation, joint fusion explain:_____ 5a. Left Arm…… 5b. Right Arm……	 _____ _____
	0 = No drift, leg holds 30 degrees position for full 5 seconds. 1 = Drift, leg falls by the end of the 5 second period but does not hit bed. 2 = Some effort against gravity; leg falls to bed by 5 seconds, but has some effort against gravity. 3 = No effort against gravity, leg falls to bed immediately. 4 = No movement 9 = Amputation, joint fusion explain:_____ 6a. Left Leg…… 6b. Right Leg……..	 _____ _____
7. Limb Ataxia: This item is aimed at finding evidence of a unilateral cerebellar lesion. Test with eyes open. In case of visual defect, insure testing is done in intact visual field. The finger-nose-finger and heel-shin tests are performed on both sides, and ataxia is scored only if present out of proportion to weakness. Ataxia is absent in the patient who cannot understand or is paralyzed. Only in the case of amputation or joint fusion may the item be scored "9", and the examiner must clearly write the explanation for not scoring. In case of blindness test by touching nose from extended arm position.	0 = Absent 1 = Present in one limb 2 = Present in two limbs	_____
8. Sensory: Sensation or grimace to pin prick when tested, or withdrawal from noxious stimulus in the obtunded or aphasic patient. Only sensory loss attributed to stroke is scored as abnormal and the examiner should test as many body areas [arms (not hands), legs, trunk, face] as needed to accurately check for hemisensory loss. A score of 2, "severe or total," should only be given when a severe or total loss of sensation can be clearly demonstrated. Stuporous and aphasic patients will therefore probably score 1 or 0. The patient with brain stem stroke who has bilateral loss of sensation is scored 2. If the patient does not respond and is quadriplegic score 2. Patients in coma (item 1a=3) are arbitrarily given a 2 on this item.	0 = Normal; no sensory loss 1 = Mild to moderate sensory loss; patient feels pinprick is less sharp or is dull on the affected s side; or there is a loss of superficial pain with pinprick but patient is aware he/she is being touched 2 = Severe to total sensory loss; patient is not aware of being touched in the face, arm and leg	_____

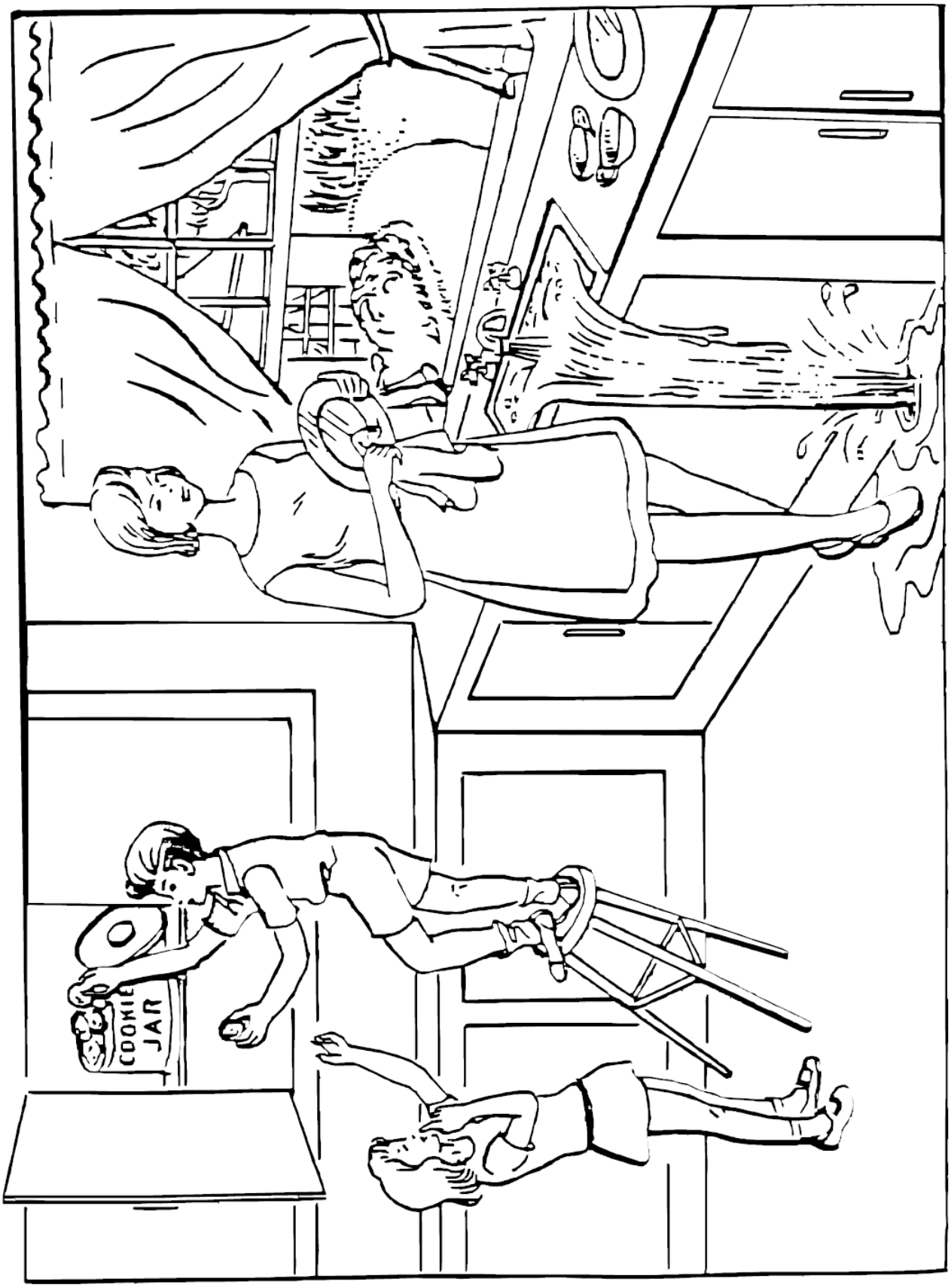
NIH Stroke Scale - Continued

9. Best Language: A great deal of information about comprehension will be obtained during the preceding sections of the examination. The patient is asked to describe what is happening in the attached picture, to name the items on the attached naming sheet, and to read from the attached list of sentences. Comprehension is judged from responses here as well as to all of the commands in the preceding general neurological exam. If visual loss interferes with the tests, ask the patient to identify objects placed in the hand, repeat, and produce speech. The intubated patient should be asked to write. The patient in coma (question 1a=3) will arbitrarily score 3 on this item. The examiner must choose a score in the patient with stupor or limited cooperation but a score of 3 should be used only if the patient is mute and follows no one step commands.	0 = No aphasia, normal 1 = Mild to moderate aphasia; some obvious loss of fluency or facility of comprehension, without significant limitation on ideas expressed or form of expression. Reduction of speech and/or comprehension, however, makes conversation about provided material difficult or impossible. For example in conversation about provided materials examiner can identify picture or naming card from patient's response. 2 = Severe aphasia; all communication is through fragmentary expression; great need for inference, questioning and guessing by the listener. Range of information that can be exchanged is limited; listener carries burden of communication. Examiner cannot identify materials provided from patient response. 3 = Mute, global aphasia; no usable speech or auditory comprehension	_____
10. Dysarthria: If patient is thought to be normal an adequate sample of speech must be obtained by asking patient to read or repeat words from the attached list. If the patient has severe aphasia, the clarity of articulation of spontaneous speech can be rated. Only if the patient is intubated or has other physical barrier to producing speech, may the item be scored "9", and the examiner must clearly write an explanation for not scoring. Do not tell the patient why he/she is being tested**.**	0 = Normal 1 = Mild to moderate; patient slurs at least some words and, at worst, can be understood with some difficulty 2 = Severe; patient's speech is so slurred as to be unintelligible in the absence of or out of proportion to any dysphasia, or is mute/anarthric 9 = Intubated or other physical barrier, explain	_____
11. Extinction and Inattention (formerly Neglect): Sufficient information to identify neglect may be obtained during the prior testing. If the patient has a severe visual loss preventing visual double simultaneous stimulation, and the cutaneous stimuli are normal, the score is normal. If the patient has aphasia but does appear to attend to both sides, the score is normal. The presence of visual spatial neglector anosagnosia may also be taken as evidence of abnormality. Since the abnormality is scored only if present, the item is never untestable.	0 = No abnormality 1 = Visual, tactile, auditory, spatial, or personal inattention or extinction to bilateral simultaneousstimulation in one of the sensory modalities 2 = Profound hemi-inattention or hemi-inattention to more than one modality. Does not recognize own hand or orients to only one side of space.	_____
	Total NIHSS Score:	

Time of NIHSS Assessment:_____

Date of NIHSS Assessment:_____

Physician/NIHSS Certified Individual Signature:_____


COOKIE
JAR

Down to earth.

I got home from work.

Near the table in the dining room.

They heard him speak on the radio last night.

MAMA

TIP – TOP

FIFTY – FIFTY

THANKS

HUCKLEBERRY

BASEBALL PLAYER

MODIFIED RANKIN SCALE (MRS)

0	No symptoms at all
1	No significant disability despite symptoms; able to carry out all usual duties and Activities
2	Slight disability; unable to carry out all previous activities, but able to look after own affairs without assistance
3	Moderate disability; requiring some help, but able to walk without assistance
4	Moderately severe disability; unable to walk without assistance and unable to attend to own bodily needs without assistance
5	Severe disability; bedridden, incontinent and requiring constant nursing care and Attention
6	Dead

TOTAL (0–6): _____

THE BARTHEL INDEX

Patient Name: _____
Rater Name: _____
Date: _____

Activity	Score
FEEDING 0 = unable 5 = needs help cutting, spreading butter, etc., or requires modified diet 10 = independent	_____
BATHING 0 = dependent 5 = independent (or in shower)	_____
GROOMING 0 = needs to help with personal care 5 = independent face/hair/teeth/shaving (implements provided)	_____
DRESSING 0 = dependent 5 = needs help but can do about half unaided 10 = independent (including buttons, zips, laces, etc.)	_____
BOWELS 0 = incontinent (or needs to be given enemas) 5 = occasional accident 10 = continent	_____
BLADDER 0 = incontinent, or catheterized and unable to manage alone 5 = occasional accident 10 = continent	_____
TOILET USE 0 = dependent 5 = needs some help, but can do something alone 10 = independent (on and off, dressing, wiping)	_____
TRANSFERS (BED TO CHAIR AND BACK) 0 = unable, no sitting balance 5 = major help (one or two people, physical), can sit 10 = minor help (verbal or physical) 15 = independent	_____
MOBILITY (ON LEVEL SURFACES) 0 = immobile or < 50 yards 5 = wheelchair independent, including corners, > 50 yards 10 = walks with help of one person (verbal or physical) > 50 yards 15 = independent (but may use any aid; for example, stick) > 50 yards	_____
STAIRS 0 = unable 5 = needs help (verbal, physical, carrying aid) 10 = independent	_____
TOTAL (0–100):	_____

The Barthel ADL Index: Guidelines

1. The index should be used as a record of what a patient does, not as a record of what a patient could do.
2. The main aim is to establish degree of independence from any help, physical or verbal, however minor and for whatever reason.
3. The need for supervision renders the patient not independent.
4. A patient's performance should be established using the best available evidence. Asking the patient, friends/relatives and nurses are the usual sources, but direct observation and common sense are also important. However direct testing is not needed.
5. Usually the patient's performance over the preceding 24-48 hours is important, but occasionally longer periods will be relevant.
6. Middle categories imply that the patient supplies over 50 per cent of the effort.
7. Use of aids to be independent is allowed.

References

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Gresham GE, Phillips TF, Labi ML. "ADL status in stroke: relative merits of three standard indexes."
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Collin C, Wade DT, Davies S, Horne V. "The Barthel ADL Index: a reliability study."
***Int Disability Study.*1988;10:61-63.**

Copyright Information

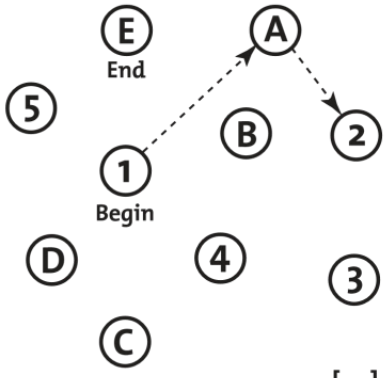
Mini-Mental State Examination (MMSE)

Maximum Score	Patient's Score	Questions
5		"What is the year? Season? Date? Day? Month?"
5		"Where are we now? State? County? Town/city? Hospital? Floor?"
3		The examiner names three unrelated objects clearly and slowly, then the instructor asks the patient to name all three of them. The patient's response is used for scoring. The examiner repeats them until patient learns all of them, if possible.
5		"I would like you to count backward from 100 by sevens." (93, 86, 79, 72, 65, …) Alternative: "Spell WORLD backwards." (D-L-R-O-W)
3		"Earlier I told you the names of three things. Can you tell me what those were?"
2		Show the patient two simple objects, such as a wristwatch and a pencil, and ask the patient to name them.
1		"Repeat the phrase: 'No ifs, ands, or buts.'"
3		"Take the paper in your right hand, fold it in half, and put it on the floor." (The examiner gives the patient a piece of blank paper.)
1		"Please read this and do what it says." (Written instruction is "Close your eyes.")
1		"Make up and write a sentence about anything." (This sentence must contain a noun and a verb.)
1		"Please copy this picture." (The examiner gives the patient a blank piece of paper and asks him/her to draw the symbol below. All 10 angles must be present and two must intersect.)
30		TOTAL

MONTREAL COGNITIVE ASSESSMENT (MOCA)

Education :
Sex :
Date of birth :
DATE :

VISUOSPATIAL / EXECUTIVE



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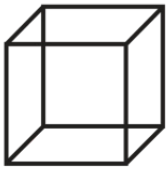


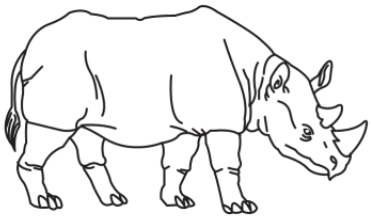
[ ] [ ]

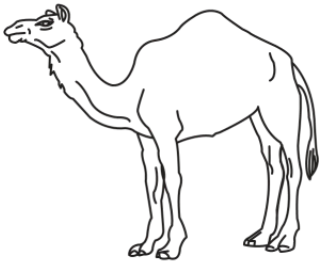
Draw CLOCK (Ten past eleven)
(3 points)

[ ] Contour [ ] Numbers [ ] Hands

POINTS __/5

NAMING





[ ] [ ] [ ] __/3

MEMORY

Read list of words, subject must repeat them. Do 2 trials. Do a recall after 5 minutes.

	FACE	VELVET	CHURCH	DAISY	RED
1st trial					
2nd trial					

No points

ATTENTION

Read list of digits (1 digit/ sec.). Subject has to repeat them in the forward order [ ] 2 1 8 5 4
Subject has to repeat them in the backward order [ ] 7 4 2 __/2

Read list of letters. The subject must tap with his hand at each letter A. No points if ≥ 2 errors
[ ] F B A C M N A A J K L B A F A K D E A A A J A M O F A A B __/1

Serial 7 subtraction starting at 100 [ ] 93 [ ] 86 [ ] 79 [ ] 72 [ ] 65
4 or 5 correct subtractions: **3 pts**, 2 or 3 correct: **2 pts**, 1 correct: **1 pt**, 0 correct: **0 pt** __/3

LANGUAGE

Repeat : I only know that John is the one to help today. [ ]
The cat always hid under the couch when dogs were in the room. [ ] __/2

Fluency / Name maximum number of words in one minute that begin with the letter F [ ] _____ (N ≥ 11 words) __/1

ABSTRACTION

Similarity between e.g. banana - orange = fruit [ ] train – bicycle [ ] watch - ruler __/2

DELAYED RECALL

	Has to recall words WITH NO CUE	FACE [ ]	VELVET [ ]	CHURCH [ ]	DAISY [ ]	RED [ ]	Points for UNCUED recall only
Optional	Category cue						
	Multiple choice cue						

__/5

ORIENTATION

[ ] Date [ ] Month [ ] Year [ ] Day [ ] Place [ ] City __/6

 Version November 7, 2004
www.mocatest.org

Normal ≥ 26 / 30

TOTAL __/30
Add 1 point if ≤ 12 yr edu

CDR

Instructions: *This form is to be completed by the clinician or other trained health professional based on informant report and neurological exam of the subject. In the extremely rare instances when no informant is available the clinician or other trained health professional must complete this form utilizing all other available information and his/her best clinical judgment. Score only as decline from previous level due to cognitive loss not impairment due to other factors.*

The CDR is a five-point scale in which CDR-0 connotes no cognitive impairment, and then the remaining four points are for various stages of dementia:

0.5 = questionable, or very mild dementia

1 = mild

2 = moderate

3 = severe

The CDR score is derived from information collected from the informant interview as well as the subject interview. The six domains used to construct the overall CDR score are: Memory, Orientation, Judgment and Problem-Solving, Community Affairs, Home and Hobbies, and Personal Care. Each of the domains is rated separately based on the participant's cognitive ability to function in these areas.

CDR

			Impairment		
	None 0	**Questionable 0,5**	**Mild 1**	**Moderate 2**	**Severe 3**
Memory (M)	No memory loss or slightly inconsistent forgetfulness	Consistent slight forgetfulness, partial recollection of events; benign forgetfulness	Moderate memory loss; more marked for recent events; defect interferes with everyday activities	Severe memory loss; only highly learned material retained; new material rapidly lost	Severe memory loss; only fragments remain
Orientation (O)	Fully oriented	Fully oriented except for slight difficulty with time relationships	Moderate difficulty with time relationships; oriented for place at examination; may have geographic disorientation elsewhere	Severe difficulty with time relationships; usually disoriented to time, often to place	Oriented to person only
Judgment & Problem Solving (JPS)	Solves everyday problems & handles business & financial affairs well; judgment good in relation to past performance	Slight impairment in solving problems, similarities and differences	Moderate difficulty in handling problems, similarities and differences; social judgment usually maintained	Severely impaired in handling problems, similarities and differences; social	Unable to make judgments or solve problems
Community Affairs (CA)	Independent function at usual level in job, shopping, volunteer and social groups	Slight impairment in these activities	Unable to function independently at these activities although may still be engaged in some; appears normal to casual inspection	No pretense of independent function outside home. Appears well enough to be taken to functions outside a family home	No pretense of independent function outside home. Appears too ill to be taken to functions outside a family home
Home & Hobbies (HH)	Life at home, hobbies and intellectual interests well maintained	Life at home, hobbies and intellectual interests slightly impaired	Mild but definite impairment of function at home; more difficult chores abandoned; more complicated hobbies and interests abandoned	Only simple chores preserved; very restricted interests, poorly maintained	No significant function in home
Personal care (PC)	Fully capable of self-care	Fully capable of self-care	Needs prompting	Requires assistance in dressing hygiene, keeping of personal effects	Requires much help with personal care; frequent incontinence

DELAYED RECALL TEST (REY TEST)

Investigator's Instructions

Test versions 1 and 2 may be used alternatively. Mark the test version used for the present evaluation.

Using the correspondant test version table, read the list of words and ask the subject to remember as many of the words as possible. Repeat the procedure five times. Mark the necessary time for each trial.

- On each column (I-V), mark all words that the subject remembers after each reading of the list
- Mark the total number of words under each column
- Mark the time, measured in seconds, for each of the trials, under each column
- The total score for each column is calculated dividing the number of words to the measured time for each trial.

Ask the subject to read the text below the table and underline the previously named words.

- Highlight, on the text, each word marked by the subject.

After 90-120 minutes ask the subject to recall as many of the words as possible, without timing.

- Mark each word the subject remembers in the delayed recall column of the table
- Mark the total number of recalled words at the bottom of the column.

DELAYED RECALL TEST (REY TEST) (2)

Nr. Crt.	Re -evaluation	I	II	III	IV	V	Delayed recall (90-120 min)
1	Pear						
2	Armchair						
3	Carp						
4	Cap						
5	Carriage						
6	Chin						
7	Lake						
8	Soap						
9	Hotel						
10	Horse						
11	Insect						
12	Wardrobe						
13	Pot						
14	Soldier						
15	Frog						
Total number of words							
Time (seconds)							
Total score (number of words/time)							

Recognition: *In the following text* you will find all the words you just read. No matter the form in which they are found in the text, plural form, articulated or not, please underline the words you recognize:

Back from the war (1), the soldier (2) searches for his friends (4) in the bar (5) of a hotel where they usually gathered to clink together pots (7) of wine (8). He took a carriage (9) with a horse (10) but soon discovered that the vehicle (11) was full of insects (12), and so he went on, first, to the lake (13) and washed his whole body with soap (15). Then he shook out his clothes (16) but observed he had to exchange them with the clean ones he had in his wardrobe (17) and then went back home (18). There he put on his new costume (19) and went on cheerfully (20) to the place (21) where he figured he will have a good time. Once he arrived there, he took a seat in an armchair, then ordered a beer (22), a portion of carp (23) and a bread (24). He removed the cap (25) of the bottle (26), drank, ate everything heartily and asked for another pear (27). Suddenly, a frog (28) appeared out of who-knows-where, and began to hop on the floor (29) and our man (30), overly amused, could not help himself a roar (31) of laughter (32).

The Hamilton Depression (HAM-D) Rating Scale provides an indication of depression and, over time, a guide to recovery. It is one of the most widely used and accepted outcome measures for evaluating the severity of depression symptoms. The HAM-D was designed to be administered by a trained professional using a semi-structured interview. Even though Hamilton provided no specific guidelines regarding the administration and scoring of the scale, nor any standardised questions for eliciting information from patients, high inter-rater reliability has been observed.[3] A structured interview guide is available which has been shown to improve reliability further [4]. Several versions of the HAM-D are available, some with additional questions (which are not scored). The HAM-D is also known as the HAM-D_{17}, HRSD and the HDRS. Although this version of the HAM-D lists 21 items, only the first 17 are scored. The remainder provide additional clinical information. It takes about 20 minutes to complete the interview and score the results. Eight items are scored on a 5-point scale, ranging from 0 = not present to 4 = severe. Nine items are scored from 0 - 2. Sum the total of the first seventeen items to arrive at the total score.

Normal	**Mild**	**Moderate**	**Severe**	**Very Severe**
0 - 7	8 - 13	14 - 18	19 - 22	>=23

Privacy - please note - this form does not transmit any information about you or your assessment scores. If you wish to keep your results, either print this document or save this file locally to your computer. If you click 'save' before closing, your results will be saved in this document. These results are intended as a guide to your health and are presented for educational purposes only. They are not intended to be a clinical diagnosis. If you are concerned in any way about your health, please consult with a qualified health professional.

HAMILTON DEPRESSION SCALE

To rate the severity of depression in patients who are already diagnosed as depressed, administer this questionnaire. The higher the score, the more severe the depressed

For each item, write the correct number on the line next to the item. (Only one response per item)

1. **DEPRESSED MOOD** (Sadness, hopeless, helpless, worthless)
   0= Absent

   1= These feeling states indicated only on questioning

   2= These feeling states spontaneously reported verbally

   3= Communicates feeling states non-verbally—i.e., through facial expression, posture, voice, and tendency to weep

   4= Patient reports VIRTUALLY ONLY these feeling states in his spontaneous verbal and non-verbal communication

2. **FEELINGS OF GUILT**
   0= Absent

   1= Self reproach, feels he has let people down

   2= Ideas of guilt or rumination over past errors or sinful deeds **3=** Present illness is a punishment. Delusions of guilt

   4= Hears accusatory or denunciatory voices and/or experiences threatening visual hallucinations

3. **SUICIDE**
   0= Absent

   1= Feels life is not worth living

   2= Wishes he were dead or any thoughts of possible death to self

   3= Suicidal ideas or gesture

4. **INSOMNIA EARLY**
   0= No difficulty falling asleep

   1= Complains of occasional difficulty falling asleep—i.e., more than 1/2 hour

   2= Complains of nightly difficulty falling asleep

5. **INSOMNIA MIDDLE**
   0= No difficulty

   1= Patient complains of being restless and disturbed during the night

2= Waking during the night—any getting out of bed rates 2 (except for purposes of voiding)

6. **INSOMNIA LATE**
0= No difficulty

1= Waking in early hours of the morning but goes back to sleep

2= Unable to fall asleep again if he gets out of bed

7. **WORK AND ACTIVITIES**
0= No difficulty

1= Thoughts and feelings of incapacity, fatigue or weakness related to activities; work or hobbies

2= Loss of interest in activity; hobbies or work—either directly reported by patient, or indirect in listlessness, indecision and vacillation (feels he has to push self to work or activities)

3= Decrease in actual time spent in activities or decrease in productivity

4= Stopped working because of present illness

8. **RETARDATION: PSYCHOMOTOR** (Slowness of thought and speech; impaired ability to concentrate; decreased motor activity)
0= Normal speech and thought

1= Slight retardation at interview

2= Obvious retardation at interview

3= Interview difficult

4= Complete stupor

9. **AGITATION**
0= None

1= Fidgetiness

2= Playing with hands, hair, etc.

3= Moving about, can't sit still

4= Hand wringing, nail biting, hair-pulling, biting of lips

10. **ANXIETY (PSYCHOLOGICAL)**
0= No difficulty

1= Subjective tension and irritability

2= Worrying about minor matters

3= Apprehensive attitude apparent in face or speech **4=** Fears expressed without questioning

11. **ANXIETY SOMATIC:** Physiological concomitants of anxiety, (i.e., effects of autonomic overactivity, "butterflies," indigestion, stomach cramps, belching, diarrhea, palpitations, hyperventilation, paresthesia, sweating, flushing, tremor, headache, urinary frequency). Avoid asking about possible medication side effects (i.e., dry mouth, constipation)
0=Absent

1=Mild

2=Moderate

3= Severe

4= Incapacitating

12. **SOMATIC SYMPTOMS (GASTROINTESTINAL)**

0= None

1= Loss of appetite but eating without encouragement from others. Food intake about normal

2= Difficulty eating without urging from others. Marked reduction of appetite and food intak

13. **SOMATIC SYMPTOMS GENERAL**

0= None

1= Heaviness in limbs, back or head. Backaches, headache, muscle aches Loss of energy and fatigability

2= Any clear-cut symptom rates 2

14. **GENITAL SYMPTOMS** (Symptoms such as: loss of libido; impaired sexual performance; menstrual disturbances)
0= Absent

1= Mild

2= Severe

15. **HYPOCHONDRIASIS**
0= Not present

1= Self-absorption (bodily)

2= Preoccupation with health

3= Frequent complaints, requests for help, etc. **4=** Hypochondriacal delusions

16. LOSS OF WEIGHT

0= No weight loss

1= Probably weight loss associated with present illness

2= Definite (according to patient) weight loss

3= Not assessed

17. INSIGHT

0= Acknowledges being depressed and ill

1= Acknowledges illness but attributes cause to bad food, climate, overwork, virus, need for rest, etc.

2= Denies being ill at all

18. DIURNAL VARIATION

A. Note whether symptoms are worse in morning or evening. If NO diurnal variation, mark none

0= No variation
1= worse in A.M.
2= Worse in A.M.

B. When present, mark the severity of the variation. Mark "None" if NO variation

0= None

1= Mild

2= Severe

19. DEPERSONALIZATION AND DEREALIZATION (Such as: Feelings of unreality; Nihilistic ideas)

0= absent
1= mild
2=moderate
3=severe
4=incapacitating

20. PARANOID SYMPTOMS
0= None
1= Suspicious
2= Ideas of reference
3= Dellusions of reference and persecution

21. OBSESSIONAL AND COMPULSIVE SYMPTOMS
0 = Absent
1 = Mild

2 = Severe

TOTAL Score:

FAQ – interpretation

Caregiver giving information: ……

Instructions for completion: mark in the column which best describes the patient's capacity to accomplish the tasks/ activities mentioned.

Points	Performance of the patient
3	Completely incapable to accomplish the task
2	Needs help to accomplish the task
1	Has difficulties, but accomplishes the task He/She never did it actually; yet, the caregiver considers that the patient can do it, but with difficulty
0	Normal accomplishment He/ She never did it actually, but the caregiver considers that the patient can do it now

Functional Activities Questionnaire (FAQ)

Administration and scoring: This questionnaire should be completed by a reliable informant (caregiver). Check off the appropriate responses to help the physician get a sense of the person's ability to function.

	Normal (0)	Has Difficulty but Manageable (1)	Requires Assistance (2)	Dependant (3)
1. Writing cheques, paying bills, balancing a cheque book.				
2. Assembling tax records, business affairs or papers.				
3. Shopping alone for clothes, household necessities or groceries.				
4. Playing a game of skill or working on a hobby.				
5. Heating water, making a cup of coffee, turning off the stove.				
6. Preparing a balanced meal.				
7. Keeping track of current events				
8. Paying attention to, understanding, and discussing a tv show, book or a magazine				
9. Remembering appointments, family occasions, holidays, and medications.				
10. Travelling out of the neighbourhood, driving, arranging to take buses.				

Total Score _____

*or could never do the activity but could do it now *or never did the activity and would have difficulty now