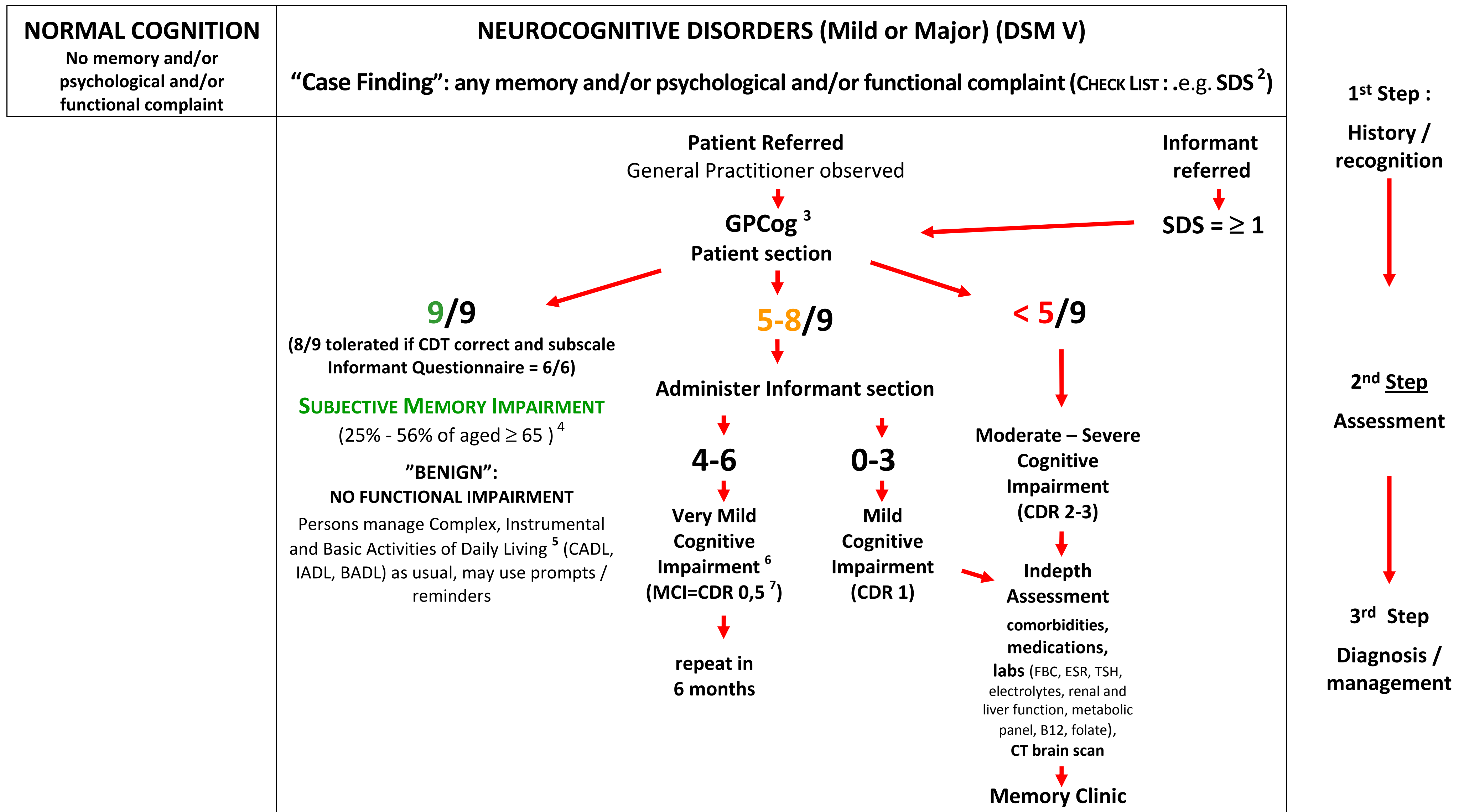
Algorithm for Assessment of Mental Status in community-dwelling people aged ≥ 50 years in Primary Care

Eligible as "Sixth Vital Sign" [1]



---

1. Boockvar K., *et al.*. (2008). The mental status vital sign. J Am Geriatr Soc; 56:2358-9
2. Mundt, J. C., *et al.*. (2000). Lay Person–Based Screening for Early Detection of Alzheimer's Disease: Development and Validation of an Instrument. J Gerontology: Psy. Sci.; Vol. 55B; 3,P163–170
3. Brodaty, H., Pond D., Kemp N.M., Luscombe G., Harding L., Berman C., Huppert F.A. (2002). The GPCOG: a new screening test for dementia designed for general practice. J Am Ger Soc; 50: 530-4
4. Reisberg B., Gauthier S. (2008). Current evidence for subjective cognitive impairment (SCI) as the pre-mild cognitive impairment (MCI) stage of subsequently manifest Alzheimer's disease. Int. Psychog. 20:1, 1–16
5. Marshall G.A., Amariglio R. E., Sperling R. A., Rentz D.M. . (2012). Activities of daily living: where do they fit in the diagnosis of Alzheimer's disease ? Neurodegen. Dis. Manage. 2(5), 483–491.
6. Petersen R. C. (2011). Mild Cognitive Impairment. N Engl J Med; 364:2227-34
7. Morris, J. C. (1993). Clinical Dementia Rating (CDR): current version and scoring rules. Neurology, 43, 2412-2414

1st Step : *HISTORY* / RECOGNITION

Educate General Practitioners (GPs) to "detect and identify" typical and atypical symptoms of cognitive impairment (CI) in community-dwelling people aged ≥ 50 years or referred by families, performing a targeted "case–finding". GPs should learn to consider as "warning signs" of early CI not only the "classic text-book" complaints of memory decline and functional impairment but also atypical signs, i.e. the onset of "behavioural-affective symptoms" like depression [8] or "psychomotor slowing ".If a patient raises concerns about memory/cognition, GPs should not dismiss as "old age" and proceed to the next step. GPs should suspect CI when:

1) patient complains of forgetfulness [9] even if subtle and/or behavioural and psychiatric disorders and/or functional impairments. The Symptoms of Dementia Screener (SDS) [2], a questionnaire administered to informant when he is the first to notice patients' impairments, provides a comprehensive check list of symptoms of CI;
2) impairments are reported by an informant, especially if the patient lacks insight into his CI;
3) the onset of behavioral or functional signs may be unmasked by change of environment such as for hospitalization or absence of the spouse or partner for death / hospitalization. Also be alert to unstable illness such as hypertension, diabetes, poor control of anticoagulation therapy which may result from patients being unreliable with medication;
4) be alert to CI in patients who become socially withdrawn, especially those aged ≥ 75, and routinely ask about difficulties.

2nd Step : *EXAMINATION*

When alerted by signs of CI, the GPs administer a Brief Psychometric Test [10] like GPCog [11]. The uniqueness of GPCog [3] lies in its combination of both cognitive testing ("Patient Examination") and informant reports ("Informant Interview") as sources of information in one scale (2-stage administration), its design for GPs and its wide cross-cultural validation [12] (www.gpcog.com.au). As all the brief psychometric tests, the GPCog allows only to detect CI not to diagnose dementia. The GPCog Patient Examination (score range 0-9) classifies memory complaints as follows:

a) 9/9 (8/9 tolerated if Clock Drawing Test is correct and Informant Interview = 6/6): subjective memory impairment [4], a benign condition not interfering with usual patient's performance in Advanced Activities of Daily Living (AADL) and Instrumental Activities of Daily Living (IADL). It affects more than 50 % of aged ≥ 65, whose 7 % may evolve to Mild Cognitive Impairment (MCI). An annual reevaluation is suggested.
b) 5-8/9: mild cognitive impairment. Only this score range needs the administration of GPCog "Informant Interview" that differentiates cognitive performance as follows:
    1. score 4-6: very mild CI (MCI) compatible with a preclinic stage of dementia: it is suggested to monitor the patient repeating GPCog in 6 months;
    2. score 3-0: mild but definite CI compatible with an early stage of dementia: an in depth assessment is suggested;
c) < 5/9 : moderate – severe CI: the GPCog "Informant Interview" is not needed and an in depth assessment is indicated.

3rd Step : *DIAGNOSIS*

When CI is detected, the GPs should undertake a physical examination and basic investigations looking for rare but reversible causes (e.g. abnormal thyroid, calcium or Vit B12 deficiency; hydrochepalus, tumour) and for specific conditions that can aggravate CI (e.g. cardiac failure, use of anti-cholinergic drugs). The GPs can request CT brain scan and blood tests (FBC, ESR, TSH, electrolytes, renal and liver function, glucose, B12 and, depending on circumstances, VDRL/RPR, HIV). Confirmation of diagnosis and further management is a shared responsibility between GPs and specialists, including memory clinics, according to regional or national systems of health care for dementia.

---

[8] Zahodne, L. B., Stern, Y., Manly, J. J. (2014). Depressive Symptoms Precede Memory Decline, but Not Vice Versa, in Non-Demented Older Adults. J. Am. Geriatr. Soc; 62:130-134.

[9] Wilson, R.S.,. Leurgans, S.E., Boyle, P.A., Schneider, J.A. Bennett, D.A. (2010). Neurodegenerative basis of age-related cognitive decline. Neurology, 75, 1070-1078.

[10] Cordell, C. B., Borson, S., *et al.* (2013). Alzheimer's Association recommendations for operationalizing the detection of cognitive impairment during the Medicare Annual Wellness Visit in a primary care setting. Alzheimer's & Dementia: 1–10

[11] Milne, A., Curverwell, A., Guss, R., Tuppen, J., Whelton, R. (2008) Screening for dementia in primary care: review of the use, efficacy and quality of measures. Int. Psychogeriatrics, 20, 911-926.

[12] Pirani, A., Brodaty, H., Martini, E., Zaccherini, E., Neviani, F., Neri, M., (2010): The validation of the Italian version of the GPCOG (GPCOG-It). Int. Psychogeriatrics; 22; 1: 82-90