Cognitive Impairment and Depression in the elderly
DEFINITION OF DEMENTIA

(now called major neurocognitive disorder)

American Psychiatric Association. Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5)
Evidence from the history and clinical assessment that indicates significant cognitive impairment in at least one of the following cognitive domains:

- Learning and memory
- Language
- Executive function
- Complex attention
- Perceptual-motor function
- Social cognition
NEW:

Social cognition

Complex attention
• The impairment must be acquired and represent a significant decline from a previous level of functioning

• The cognitive deficits must interfere with independence in everyday activities

• In the case of neurodegenerative dementias such as Alzheimer disease, the disturbances are of insidious onset and are progressive, based on evidence from the history or serial mental-status examinations

• The disturbances are not occurring exclusively during the course of delirium

• The disturbances are not better accounted for by another mental disorder (eg, major depressive disorder, schizophrenia)
### DSM-IV criteria for dementia

<table>
<thead>
<tr>
<th>DSM-IV criteria for dementia</th>
<th>DSM-5 criteria for major neurocognitive disorder (previously dementia)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>A1. Memory impairment</strong></td>
<td>*<em>A. Evidence of significant cognitive decline from a previous level of performance in one or more cognitive domains</em>:</td>
</tr>
<tr>
<td><strong>A2. At least one of the following:</strong></td>
<td>- Learning and memory</td>
</tr>
<tr>
<td>- Aphasia</td>
<td>- Language</td>
</tr>
<tr>
<td>- Apraxia</td>
<td>- Executive function</td>
</tr>
<tr>
<td>- Agnosia</td>
<td>- Complex attention</td>
</tr>
<tr>
<td>- Disturbance in executive functioning</td>
<td>- Perceptual-motor</td>
</tr>
<tr>
<td></td>
<td>- Social cognition</td>
</tr>
<tr>
<td><strong>B. The cognitive deficits in A1 and A2 each cause significant impairment in social or occupational functioning and represent a significant decline from a previous level of functioning</strong></td>
<td><strong>B. The cognitive deficits interfere with independence in everyday activities. At a minimum, assistance should be required with complex instrumental activities of daily living, such as paying bills or managing medications.</strong></td>
</tr>
<tr>
<td><strong>C. The cognitive deficits do not occur exclusively during the course of delirium</strong></td>
<td><strong>C. The cognitive deficits do not occur exclusively in the context of a delirium</strong></td>
</tr>
<tr>
<td></td>
<td><strong>D. The cognitive deficits are not better explained by another mental disorder (eg, major depressive disorder, schizophrenia)</strong></td>
</tr>
</tbody>
</table>
diagnosis was missed in 21 percent of demented or delirious patients on a general medical ward

while 20 percent of nondemented patients were misjudged as demented
<table>
<thead>
<tr>
<th>Diagnostic test</th>
<th>Sensitivity (percent)</th>
<th>Specificity (percent)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mini-Mental State Exam*</td>
<td>87</td>
<td>82</td>
</tr>
<tr>
<td>Montreal Cognitive Assessment</td>
<td>≥94</td>
<td>≤60</td>
</tr>
<tr>
<td>Short Portable Mental Status Questionnaire*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Any dementia</td>
<td>82</td>
<td>92</td>
</tr>
<tr>
<td>Mild dementia</td>
<td>55</td>
<td>96</td>
</tr>
<tr>
<td>NINCDS criteria ‡</td>
<td>92</td>
<td>65</td>
</tr>
<tr>
<td>DSM-IV criteria ‡</td>
<td>76</td>
<td>80</td>
</tr>
<tr>
<td>Clinical judgment ‡</td>
<td>85</td>
<td>82</td>
</tr>
</tbody>
</table>

NINCDS: National Institute of Neurological and Communicative Diseases; DSM-IV: Diagnostic and Statistical Manual of Mental Disorders, 4th ed.

* Diagnosis of dementia.
† Diagnosis of Alzheimer disease.
Patients with dementia may have difficulty with one or more of the following:

- Retaining new information (eg, trouble remembering events)
- Handling complex tasks (eg, balancing a checkbook)
- Reasoning (eg, unable to cope with unexpected events)
- Spatial ability and orientation (eg, getting lost in familiar places)
- Language (eg, word finding)
- Behavior

The diagnosis of dementia must be distinguished from delirium and depression
Differential diagnosis of memory loss

<table>
<thead>
<tr>
<th>Symptom</th>
<th>Usual cause</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gradual onset of short-term memory loss and functional impairment in</td>
<td>Dementia</td>
<td>Alzheimer disease, Parkinson dementia, Lewy body dementia, frontotemporal dementia, alcohol-related dementia, Creutzfeld-Jacob disease</td>
</tr>
<tr>
<td>more than one domain:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>I. Executive function (finances, shopping, cooking, laundry,</td>
<td></td>
<td></td>
</tr>
<tr>
<td>transportation)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>II. Basic activities of daily living (feeding, dressing, bathing,</td>
<td></td>
<td></td>
</tr>
<tr>
<td>toileting, transfers)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stepwise, sudden deterioration in cognition; episodes of confusion,</td>
<td>Cerebrovascular</td>
<td>Vascular dementia, multi-infarct dementia, Binswanger dementia (subcortical dementia)</td>
</tr>
<tr>
<td>aphasia, slurred speech, focal weakness</td>
<td>disease</td>
<td></td>
</tr>
<tr>
<td>Acute cognitive impairment with clouded sensorium; difficulty with</td>
<td>Delirium</td>
<td>Hypo- or hyperglycemia, hypo- or hypernatremia, hypoxemia, anemia,</td>
</tr>
<tr>
<td>attention; may have hypersomnolence</td>
<td></td>
<td>intermittent cerebral ischemia, thyrotoxicosis, myxedema, alcohol</td>
</tr>
<tr>
<td></td>
<td></td>
<td>withdrawal, sepsis, drugs (especially cholinergics, benzodiazepines, etc)</td>
</tr>
<tr>
<td>Complains of memory loss, decreased concentration, impaired judgment,</td>
<td>Depression</td>
<td>Minor depression, dysthymic disorder, major depression, pathologic grief</td>
</tr>
<tr>
<td>feels worse in morning and hopeless</td>
<td></td>
<td>reaction</td>
</tr>
</tbody>
</table>
Dementia syndromes:

- Alzheimer disease
- Dementia with Lewy bodies
- Frontotemporal dementia
- Vascular (multi-infarct) dementia
- Parkinson disease with dementia
Alzheimer disease

Cardinal symptoms

Memory impairment
Declarative episodic memory
Recent memory impairment

Executive function and judgement/problem solving

Behavioral and psychological symptoms

CLINICAL COURSE — AD progresses inexorably. The progress of the disease can be measured with mental status scales such as the Mini-Mental State Examination (MMSE), the Montreal Cognitive Assessment (MoCA)
### Clinical dementia rating (CDR): 0, 0.5, 1, 2, 3

<table>
<thead>
<tr>
<th>Impairment</th>
<th>None (0)</th>
<th>Questionable (0.5)</th>
<th>Mild (1)</th>
<th>Moderate (2)</th>
<th>Severe (3)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Memory</td>
<td>No memory loss or slight inconstant forgetfulness</td>
<td>Consistent slight forgetfulness; partial recollection of events</td>
<td>Moderate memory loss; more marked for recent events; defect interferes with everyday activities</td>
<td>Severe memory loss; only highly learned material retained; new material rapidly lost</td>
<td>Severe memory loss; only fragments remain</td>
</tr>
<tr>
<td>Orientation</td>
<td>Fully oriented</td>
<td>Fully oriented or slight difficulty with time relationships</td>
<td>Moderate difficulty with time relationships; oriented for place at examination; may have geographic disorientation elsewhere</td>
<td>Severe difficulty with time relationships; usually disoriented in time, often to place</td>
<td>Oriented to person only</td>
</tr>
<tr>
<td>Judgment and problem</td>
<td>Solves everyday problems and handles business and financial affairs well; judgment good in relation to past performance</td>
<td>Slight impairment to solving problems, similarities, differences</td>
<td>Moderate difficulty in handling problems, similarities, differences; social judgment usually maintained</td>
<td>Severely impaired in handling problems, similarities, differences; social judgment usually impaired</td>
<td>Unable to make judgments or solve problems</td>
</tr>
<tr>
<td>Community affairs</td>
<td>Independent function at usual level in job, shopping, volunteer and social groups</td>
<td>Slight impairment in these activities</td>
<td>Unable to function independently at these activities though may still be engaged in some; appears normal to casual inspection</td>
<td>No pretense of independent function outside of home; appears well enough to be taken to functions outside of family home</td>
<td>No pretense of independent function outside of home; appears too ill to be taken to functions outside a family home</td>
</tr>
<tr>
<td>Home and hobbies</td>
<td>Life at home, hobbies, intellectual interests well maintained</td>
<td>Life at home, hobbies, intellectual interests slightly impaired</td>
<td>Mild but definite impairment of function at home; more difficult chores abandoned; more complicated hobbies and interests abandoned</td>
<td>Only simple chores preserved; very restricted interests, poorly maintained</td>
<td>No significant function in home</td>
</tr>
<tr>
<td>Personal care</td>
<td>Fully capable of self care</td>
<td>Fully capable of self care</td>
<td>Needs prompting</td>
<td>Requires assistance in dressing, hygiene keeping of personal effects</td>
<td>Requires much help with personal care; frequent incontinence</td>
</tr>
</tbody>
</table>

Score only as decline from previous usual level due to cognitive loss, not impaired due to other factors.
### DSM-5 criteria for major neurocognitive disorder due to Alzheimer disease

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<thead>
<tr>
<th><strong>A.</strong> Evidence of significant cognitive decline from a previous level of performance in one or more cognitive domains*:</th>
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<td><strong>D.</strong> The cognitive deficits are not better explained by another mental disorder (e.g., major depressive disorder, schizophrenia).</td>
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<tr>
<td><strong>E.</strong> There is insidious onset and gradual progression of impairment in at least two cognitive domains.</td>
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<tr>
<td><strong>F.</strong> Either of the following:</td>
</tr>
<tr>
<td>Evidence of a causative Alzheimer disease genetic mutation from family history or genetic testing.</td>
</tr>
<tr>
<td>All three of the following are present:</td>
</tr>
<tr>
<td>1) Clear evidence of decline in memory and learning and at least one other cognitive domain.</td>
</tr>
<tr>
<td>2) Steadily progressive, gradual decline in cognition, without extended plateaus.</td>
</tr>
<tr>
<td>3) No evidence of mixed etiology (i.e., absence of other neurodegenerative disorders or cerebrovascular disease, or another neurological, mental, or systemic disease or condition likely contributing to cognitive decline).</td>
</tr>
</tbody>
</table>

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DSM: diagnostic and statistical manual.

* Evidence of decline is based on: Concern of the individual, a knowledgeable informant, or the clinician that there has been a significant decline in cognitive function; and a substantial impairment in cognitive performance, preferably documented by standardized neuropsychological testing or, in its absence, another quantified clinical assessment.
At least three common pathological entities are thought to contribute substantively to vascular dementia:

**Large artery infarctions**, usually cortical, sometimes also or exclusively subcortical in location.

**Small artery infarctions or lacunes**, exclusively subcortical, in the distribution of small penetrating arteries, affecting the basal ganglia, caudate, thalamus, and internal capsule as well as the cerebellum and brainstem (Lacunar Infarcts)

**Chronic subcortical ischemia** occurring in the distribution of small arteries in the periventricular white matter and leading to selective loss of tissue elements in order of their selective vulnerability - neuron, oligodendrocyte, myelinated axon, astrocyte, and endothelial cell
**Cortical syndrome** — In primarily cortical VaD, cognitive features are specific to the areas affected

Medial frontal: executive dysfunction, abulia, or apathy. Bilateral medial frontal lobe infarction may cause akinetic mutism.

Left parietal: aphasia, apraxia, or agnosia.

Right parietal: hemineglect (anosognosia, asomatognosia), confusion, agitation, visuospatial and constructional difficulty.

Medial temporal: anterograde amnesia.
**Subcortical syndrome** — In subcortical pathology, both lacunar infarctions and chronic ischemia affect the deep cerebral nuclei and white matter pathways. These often disrupt frontal lobe and other cortico-cortico circuits, producing deficits attributable to remote brain areas

- Focal motor signs
- Early presence of gait disturbance (marche a petit pas or magnetic, apraxic gait or Parkinsonian gait)
- History of unsteadiness and frequent, unprovoked falls
- Early urinary frequency, urgency, and other urinary symptoms not explained by urologic disease
- Pseudobulbar palsy
- Personality and mood changes, abulia, apathy, depression, emotional incontinence
- Cognitive disorder characterized by relatively mild memory deficit, psychomotor retardation, and abnormal executive function

The course of subcortical VaD may be gradual or stepwise and either slow or fast in decline.
Delirium v. Dementia

• Dementia- global impairment of cognitive function, usually progressive, interferes with normal social and occupation function

Classification by Possibility of Recovery

- “Pseudodementia”-cognitive impairment caused by a psychiatric disorder. Most often depression, but also NPH, meningiomas, etc.
- Toxic conditions
- Alcohol or drug induced
Alzheimer’s spectrum

- Early v. late onset. Early has greater possibility of genetic etiology.
- Hippocampus, amygdala
- Treatments: Aricept, Reminyl, Exelon acetylcholinesterase inhibition. NMDA action: Namenda
- Environmental stimulation and enrichment
- Education of family caregivers
Nonmedical Treatment Issues

- Optimizing function
- Assessing disability, if still employed
- Driving
- Competency
- End of life decisions
- Location of care
- Family dysfunction/reorganization
- Family education and caregiving
Mild cognitive impairment (MCI) is generally defined by the presence of memory difficulty and objective memory impairment but preserved ability to function in daily life. Patients with MCI are at increased risk of dementia.

- A concern regarding cognition reported by the patient or informant or observed by clinician
- Objective evidence of impairment in one or more cognitive domains that is not explained by age or education
- Preservation of independence in functional abilities
- Not demented
Depression in Elderly
Epidemiology

- Men: 5-12%
- Women: 10-25%
- Prevalence 1-2% in elderly
  - 6-10% in Primary Care setting
  - 12-20% in Nursing home setting
  - 11-45% in Inpatient setting
  - >40% of outpt. Psychiatry clinic and inpt. psychiatry
- Peak age of onset 3rd decade
- Late-life depression: secondary to vascular etiology
Etiology

- Biological factors
- Social factors
- Psychological factors
Biological factors

• Genetic
  – High prevalence in first degree relatives
  – High concordance with monozygotic twins
  – Short allele of serotonin transported gene

• Medical Illness:
  – Parkinson's, Alzheimer's, cancer, diabetes or stroke

• Vascular changes in the brain

• Chronic or severe pain

• Previous history of depression

• Substance abuse
Social factors

• Loneliness, isolation
• Recent bereavement
• Lack of a supportive social network
• Decreased mobility
  – Due to illness or loss of driving privileges
Psychological factors

- Traumatic experiences
  - Abuse
- Damage to body image
- Fear of death
- Frustration with memory loss
- Role transitions
Common precipitants

- Arguments with friends/relatives
- Rejection or abandonment
- Death or major illness of loved one
- Loss of pet
- Anniversary of a (-) event
- Major medical illness or age-related deterioration
- Stressful event at work
- Medication Noncompliance
- Substance use
DEFINITIONS OF DEPRESSION

- Mood state, as indicated by feelings of sadness, despair, anxiety, emptiness, discouragement, or hopelessness; having no feelings; or appearing tearful. Depressed (dysphoric) mood may be normal or a symptom of a psychopathological syndrome or a general medical disorder.

- Syndrome, which is a constellation of symptoms and signs that may include depressed mood. Depressive syndromes that are typically encountered include major depression, minor depression, or dysthymia (persistent depressive disorder).

- Mental disorder that identifies a distinct clinical condition. As an example, the syndrome of major depression can occur in several disorders, such as unipolar major depression (also called “major depressive disorder”), bipolar disorder, schizophrenia, substance/medication-induced depressive disorder, and depressive disorder due to another (general) medical condition.
Definition

A syndrome complex characterized by mood disturbance plus variety of cognitive, psychological, and vegetative disturbances.
Clinical Features

• DSM V criteria
  – 5/9 should be present for at least two weeks
  – Must be a change from previous functioning
  – Presence of decreased interest or low/depressed mood is must feature

• SIGECAPS
SIG(M)ECAPS

- **Sleep disturbance:** decreased or increased
- **Interest or pleasure:** decreased
- **Guilt** or feeling worthless
- **Mood:** sustained low or depressed
- **Energy** loss or fatigue
- **Concentration** problems or problems with memory
- **Appetite** disturbance, weight loss or gain
- **Psychomotor** agitation or retardation
- **Suicidal ideation,** thoughts of death
MINOR Depression

• Also known as
  – subsyndromal depression
  – subclinical depression
  – mild depression

• 2 - 4 times more common than major depression

• Associated with:
  – subsequent major depression
  – greater use of health services
  – reduced physical, social functioning
  – loss of quality of life

• Responds to same treatments!
Atypical depression

- Somatic complaints
- Hyperphagia,
- Hypersomnia,
- Hypersensitivity to rejection
- “Heavy” feeling in upper or lower extremities (leaden paralysis)
In primary care, physical symptoms are often the chief complaint in depressed patients.

N = 1146 Primary care patients with major depression

Dysthymia

- More chronic, low intensity mood disorder
- By definition, symp must be present > 2 yrs consecutively
- It is characterized by anhedonia, low self-esteem, & low energy
- It may have a more psychologic than biologic etiology
- It tends to respond to Rx & psychotherapy equally
- Long-term psychotherapy is frequently able to bring about lasting change in dysthymic individuals
Bipolar Disorder

• People with this type of illness change back and forth between periods of depression and periods of mania (an extreme high).

• Symptoms of mania may include:
  – Less need for sleep
  – Overconfidence
  – Racing thoughts
  – Reckless behavior
  – Increased energy
  – Mood changes are usually gradual, but can be sudden
Season Affective Disorder

- Results from changes in the season. Most cases begin in the fall or winter, or when there is a decrease in sunlight
- Pattern of onset at the same time each year
- Full remissions occur at a characteristic time of year
Pseudo-dementia

- A syndrome of cognitive impairment that mimics dementia but is actually depression
- Poor attention and concentration
- Symptoms resolve as the depression is treated effectively
- If considerable cognitive impairment remains, an underlying dementia is suspected
- Even “completely recovered” patients have higher rates of dementia (20% /year of f/u)
- This is 2.5 to 6 times higher than population risk
Psychotic depression

• Abnormal thought process – psychotic thinking
• Frank hallucinations and delusions
Depression in Elderly

- **NOT** a normal part of aging
- 2 million Americans over age 65 have depressive illness
- Sub-syndromal depression increases the risk of developing depression
  - Leads to early relapse and chronicity
- Often co-occurs with other serious illnesses
- Under-diagnosed and under-treated
- Suicide rates in the elderly are the highest of any age group.
Facts in Elderly

• Only 11 percent in community receive adequate antidepressant treatment
• The direct and indirect costs – $43 billion each year
• Late life depression is particularly costly because of the excess disability that it causes and its deleterious interaction with physical health
Depression in Elderly

- Difficult to diagnose
- Low/depressed mood need not be present
- Persistent loss of pleasure and interest in previously enjoyable activities (anhedonia) must be present
- Reject diagnosis of depression
- Masked depression or depression without sadness - mainly somatic complaints
Depression in Elderly

- Symptoms of minor depression
- Somatic complaints: Persistent, vague, unexplained physical complaints
- Agitation, anxiety
- Memory problems, difficulty concentrating
- Social withdrawal
- A high degree of suspicion and specific inquiry is necessary for its detection and treatment
Differential diagnosis in Elderly

• Differentiation from medical illness:
  – Hyperthyroidism
  – Parkinson’s disease
  – Carcinoma of the pancreas
  – Dementia

• Bereavement:
  – Time limited resolves within few months
  – 14% develop depression within 2 yrs of loss
  – Look for functional impairment
Depression associated with Structural Brain Disease

- **Alzheimer's disease:**
  - 20% of subjects with early AD have depression

- **Cerebrovascular disease: Vascular depression:**
  - Anhedonia, executive dysfunction and absence of guilt preoccupations
  - Late age of onset
  - Risk factors for vascular disease
  - Prefrontal or subcortical white matter hyperintensities on T2 weighted MRI
  - Non-amnestic neuropsychologic deficits in tasks req’ initiation, persistence and self monitoring
Assessment
Geriatric Depression Scale

Choose the best answer for how you have felt over the past week:
1. Are you basically satisfied with your life? YES / NO
2. Have you dropped many of your activities and interests? YES / NO
3. Do you feel that your life is empty? YES / NO
4. Do you often get bored? YES / NO
5. Are you in good spirits most of the time? YES / NO
6. Are you afraid that something bad is going to happen to you? YES / NO
7. Do you feel happy most of the time? YES / NO
8. Do you often feel helpless? YES / NO
9. Do you prefer to stay home, rather than going out, doing new things? YES / NO
10. Do you feel you have more problems with memory than most? YES / NO
11. Do you think it is wonderful to be alive now? YES / NO
12. Do you feel pretty worthless the way you are now? YES / NO
13. Do you feel full of energy? YES / NO
14. Do you feel that your situation is hopeless? YES / NO
15. Do you think that most people are better off than you are? YES / NO

*Underlined items constitute the four item scale*
Labs:

• CBC (complete blood count)
• CMP (Comprehensive Metabolic Panel)
• TSH
• Dementia workup
• Cognitive testing
• EKG
Why treat

• Substantially ↑ the likelihood of death from physical illnesses
• ↑ impairment from a medical disorder and impedes its improvement
• When untreated - interferes with a patient's ability to follow the necessary treatment regimen
• Healthcare costs of elderly people: 50% higher than those of non-depressed seniors.
• Lasts longer in the elderly.
Treatment

- Non-medical
- Medical
Non-Medical interventions

- Balanced diet
- Fluids
- Exercise
- Avoid alcohol
- Family support/social support
- Focus on positives
- Promote autonomy
- Promote creativity
- Alternate therapy: Pet therapy, horticulture therapy
- Pace appropriately
- Inform about depression
- Avoid stressors
Medical Interventions

• Medications
• Psychotherapy
• Electro-convulsive therapy
• Vagal Nerve stimulation
• Combination therapy
Medications

• Serotonergic
  – SSRIs: Citalopram, Escitalopram, Sertraline, Paroxetine, Fluoxetine

• Noradrenergic
  – TCAs

• Dopaminergic
  – Bupropion

• Dual mechanism
  – Venlafaxine, Mirtazapine, Duloxetine, SSRIs + Bupropion
Treatment selection

- **Serotonergic**
  - Anxious, agitated, hostile,
  - hypochondriac
- **Noradrenergic**
  - Avoid use in elderly
- **Dopaminergic**
  - Psychomotor retarded, blunted, apathetic
- **Dual mechanism**
  - Melancholic, atypical, treatment resistant
<table>
<thead>
<tr>
<th>Medication</th>
<th>Starting Dose (mg/day)</th>
<th>Therapeutic Dose (mg/day)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>TCAs</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Amitriptyline</td>
<td>25-50</td>
<td>100-300</td>
</tr>
<tr>
<td>Nortriptyline</td>
<td>25</td>
<td>50-200</td>
</tr>
<tr>
<td>Imipramine</td>
<td>25-50</td>
<td>100-300</td>
</tr>
<tr>
<td><strong>SSRIs</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Citalopram</td>
<td>10-20</td>
<td>20-60</td>
</tr>
<tr>
<td>Fluoxetine</td>
<td>10-20</td>
<td>20-80</td>
</tr>
<tr>
<td>Sertraline</td>
<td>25-50</td>
<td>100-200</td>
</tr>
<tr>
<td>Paroxetine</td>
<td>10-20</td>
<td>20-50</td>
</tr>
<tr>
<td>Escitalopram</td>
<td>10</td>
<td>20</td>
</tr>
<tr>
<td><strong>MAOIs</strong></td>
<td></td>
<td></td>
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<tr>
<td>Phenelzine</td>
<td>45</td>
<td>180</td>
</tr>
<tr>
<td>Tranylcyromine</td>
<td>20</td>
<td>30-60</td>
</tr>
<tr>
<td><strong>Mixed antidepressants</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mirtazapine</td>
<td>7.5-15</td>
<td>15-45</td>
</tr>
<tr>
<td>Venlafaxine XR</td>
<td>37.5</td>
<td>75-225</td>
</tr>
<tr>
<td>Bupropion SR</td>
<td>100-150</td>
<td>300</td>
</tr>
<tr>
<td>Duloxetine</td>
<td>20-30</td>
<td>60</td>
</tr>
</tbody>
</table>
Special considerations in elderly

- Start low and go slow
- Dose adjustment based on renal clearance: 30% reduction of mirtazapine clearance with creatinine clearance: 11-15
- SSRIs are used at the same dose as adults
- Response time is longer in elderly >6-12 weeks
- Because of higher risk of relapse in elderly, continue antidepressants for > 2 years after remission of major depressive disorder
Special considerations in elderly

- All antidepressants are equally efficacious
- SSRIs are better tolerated than TCAs
- Escitalopram, citalopram, sertraline, venlafaxine and mirtazapine may have fewer drug interactions
- SSRI related side effects seen in elderly
  - Extrapyramidal side effects
  - Apathy
  - Anorexia
  - SIADH
  - Upper GI bleeding
Psychotherapy

• Very helpful in mild to moderate depression
• Response time slower
• Relapse less frequent
• CBT
  – As effective as antidepressants
• IPT
  more effective than antidepressants in treating mood suicidal ideations, and lack of interest, whereas antidepressants are more effective for appetite and sleep disturbances
Electro-convulsive Therapy

- Indications:
  - Failure of antidepressant trials
  - Severe depression with catatonic or psychotic features
  - High risk of suicide
  - Poor tolerability of oral meds
- Response rates from 70-90%
- Most efficacious antidepressant
- Contraindication: ICP, intracranial tumors
- 3x/wk with avg number of treatments 8-12, may need maintenance therapy
- Side effects: Short term memory loss
Vagal Nerve Stimulation

- Electrical pulses applied to the left vagus nerve in the neck for transmission to the brain
- Intermittent stimulation
  - 30 sec on/5 min off
- Implanted in over 11,500 patients
- Battery life of 8-12 years, weighs 38 gms, 10.3 mm thick
- Side effects:
  - Hoarse voice, pain or tingling in the throat or neck, cough, headache and ear pain, difficulty sleeping, shortness of breath, vomiting
SUICIDE: DON’T FORGET

- Ask about
  - suicidal ideation
  - intent
Suicide risk in elderly

• Very Important, Easy to miss
• Always ask
• Firearms at home
• Many older adults who commit suicide have visited a primary care physician very close to the time of the suicide
  – 20 percent on the same day
  – 40 percent within one week – of the suicide
Suicide risk in elderly

- Suicides twice as common as homicides
- 12% of the population is elderly, they account for 20% of the 30,000 suicides/yr
- Older patients make 2 to 4 attempts per completed suicide, younger patients make 100 to 200 attempts per completion
- When they decide - they are serious