Depression
What is depression?

**Depression is a real illness that impacts the brain.** It is a serious illness caused by changes in brain chemistry. It is negatively affects how you feel, the way you think and how you act. Fortunately, it is also treatable.

Depression causes feelings of sadness and/or a loss of interest in activities once enjoyed. It can lead to a variety of emotional and physical problems and can decrease a person’s ability to function at work and at home.
Major depressive disorder (MDD)

Major depressive disorder (MDD) is a common and costly disorder which is usually associated with severe and persistent symptoms leading to important social role impairment and increased mortality. It is one of the most important causes of disability worldwide.

The influence of genetic factors is around 30-40%. Non-genetic factors, explaining the remaining 60-70% of the variance in susceptibility to MDD.
Non-genetic and genetic factors

**Non-genetic factors** are mostly adverse events in childhood and ongoing or recent stress due to interpersonal adversities, including childhood sexual abuse, other *lifetime trauma*, low social support, *marital problems*, and divorce.

**Genetic factor:** There is **No** solid evidence for *specific genes* and specific gene-by-environment interactions in the pathogenesis of MDD.

Genome-wide association studies have indicated that *many genes* with small effects are involved in complex diseases.
Men and women responses to depression vary depending upon the type of stressor. Specifically, men are more likely to have depressive episodes following divorce, separation, and work difficulties, whereas women are more sensitive to events in their proximal social network, such as difficulty getting along with an individual, serious illness, or death.

Men show greater cortisol responses to achievement challenges, whereas women show greater cortisol responses to social rejection challenge.

Elevated cortisol may act as a mediator between major depression and its physical long-term consequences such as coronary heart disease, type II diabetes, and osteoporosis.
Corticotropin-releasing hormone

There is convergent evidence for Corticotropin-releasing hormone (CRH) to play a major role in the pathogenesis of certain types of depression.

CRH produces a number of physiological and behavioral alterations that resemble the symptoms of major depression, including decreased appetite, disrupted sleep, decreased libido, and psychomotor alterations. There is also preliminary evidence that CRH1 receptor antagonists reduce symptoms of depression and anxiety.
Monoaminergic systems

Anatomy suggests that monoaminergic systems are involved in the regulation of a broad range of brain functions, including mood, attention, reward processing, sleep, appetite, and cognition.

Almost every compound that inhibits monoamine reuptake, leading to an increased concentration of monoamines in the synaptic cleft, has been proven to be a clinically effective antidepressant.

These observations led to the pharmacologically most relevant theory of depression, referred to as the monoamine-deficiency hypothesis.
The synapse
Passing the impulse to the next cell

At the end of the terminal branches are vesicles with neurotransmitters. The neurotransmitters are released into the synapse.

Synapse: gap in between an axon terminal and a dendrite.
Monoamine-deficiency theory

The monoamine-deficiency theory posits that the underlying pathophysiological basis of depression is a depletion of the neurotransmitters serotonin, norepinephrine or dopamine in the central nervous system.
Volume loss of the hippocampus

There is consistent evidence that the volume loss of the hippocampus and other brain regions is related to the duration of depression, suggesting that untreated depression leads to hippocampal volume loss, possibly resulting in increased stress sensitivity and increased risk of recurrence.
Depression and aging
Not a Normal Part of Aging

Depression is a common problem among older adults, but it is NOT a normal part of aging.

Important life changes that happen as we get older may cause feelings of uneasiness, stress, and sadness.

For instance, the death of a loved one, moving from work into retirement, or dealing with a serious illness can leave people feeling sad or anxious. After a period of adjustment, many older adults can regain their emotional balance, but others do not and may develop depression.
Symptoms May Be Hard To Recognize

Depression in older adults may be **difficult** to recognize because they may show different symptoms.

**Symptoms** Vary from person to person

**Sadness** is not always the main symptom for some people, Sometimes depression can **hide** behind a smiling face.

**Depressed people** may not be willing to talk about their feelings.
Symptoms of Depression

• 2 key signs of depression are:
  • Loss of interest in things you like to do
  • Sadness or irritability
Additional Signs include:

- Feeling empty
- Inability to enjoy anything
- Hopelessness
- Loss of sexual desire
- Loss of warm feelings for family or friends
- Feelings of self blame or guilt
- Loss of self esteem
- Inexplicable crying spells, sadness
- or irritability
- have trouble sleeping
- feeling tired
Changes in behavior and attitude

These may include:

- General slowing down
- Neglect of responsibilities and appearance
- Poor memory
- Inability to concentrate
- Suicidal thoughts, feelings or behaviors
- Difficulty making decisions
Physical Complaints

• These may include:

  • Sleep **disturbances** such as early morning waking, sleeping too much or insomnia
  
  • Loss of **appetite**, Lack of energy and Weight loss
  
  • Unexplained **headaches** or backaches
  
  • Stomachaches, **indigestion** or changes in bowl habits
Is It Grief or Depression?

Sometimes it can be difficult to distinguish grief from major depression.

Grief after loss of a loved one is a normal reaction and generally does not require professional mental health treatment.

However, grief that is complicated and lasts for a long time following a loss may require treatment.
What causes Depression?

- Genetic
- Imbalances of certain chemicals in the brain
- negative events
- Menopause
- Major Illnesses
- Certain medications and Alcohol
- No apparent reason!
Treatment Depression
Getting Help

The first step is to accept that you or your family member needs help.

You may not be comfortable with the subject of mental illness, Or, you might feel that asking for help is a sign of weakness. This is wrong. Depression is completely similar to any other diseases.

You might be like many older people, their relatives, or friends who believe that a depressed person can quickly “snap out of it” or that some people are too old to be helped. They are wrong, life is life no matter in what age.
Treatment for Depression

• Medication

  • Antidepressants can help ease the symptoms of depression and return a person to normal functioning.

  • Antidepressants are not habit forming.
Psychotherapy

• This can help many depressed people understand
• themselves and cope with their problems.

• For example:
  • Interpersonal therapy works to change relationships that affect depression
  • Cognitive-behavioral therapy helps people change negative thinking and behavior patterns
Faith and Depression

A substantial amount of research points to the benefits of faith to mitigate symptoms of depression, this positive effects of real faith is belong to:

Faith is love, mercy and help
Faith Provides Hope
Faith Changes Your Brain
Faith Assigns Meaning to Suffering
Faith Provides a Support System
Faith Provides Heroes and Inspiration
Unseen factors

The tragic condition of Man is that our eyes have been so distracted by physical things and pleasure, that we have lost the ability to see the unseen. This is why people are so unhappy: they are trying to relieve this pain in the soul by recourse to physical pleasure.***

But, physical pleasure cannot relieve a pain that is essentially spiritual. The only answer to our condition is a pleasure which comes not from the body but from self-knowledge.

Al-Ghazali / Islamic philosopher
Being alone, could help

**Start small.** “The ability to be alone is a learned skill,” Carter says.

“She recommends eating a meal by yourself once a week, avoiding all technology until after your morning shower, or refusing to read the newspaper for the first 10 minutes of breakfast.

Being **alone** is not the same as being lonely. While research has shown that **loneliness** poses serious health risks, a certain amount of **‘alone time’** can be good for you.
Practice mindfulness

Practice mindfulness. Pay attention to what you’re doing in the moment, even if it’s just sitting on a bus or performing a simple task. “When you’re washing your hands, focus on each finger, from the top to bottom

Focus on breathing. Having a single point of reference to concentrate on, such as the in-and-out motion of breathing, can clear the mind of other thoughts. Deep breathing can have a calming effect
Creativity

Get creative. If you need some external stimuli to feel at ease, Wulfert recommends listening to music you never heard before or getting in touch with your creative side through painting or drawing. “You’re expanding your mind, while at the same time you may just discover something new that you love.”.
Nutrition and Depression
Nutrition and Depression

Good nutrition is important for our mental and physical health.

You need to feed your brain regularly with the right mix of nutrients for it to work properly.

Aim to eat good and often to keep your mood at its best.
Generals nutritional notes

• Antioxidants Prevent Cell Damage.
• "Smart" Carbs Can Have a Calming Effect.
• Protein-Rich Foods Boost Alertness.
• Try a Mediterranean Diet.
• Get Enough Vitamin D (Cod liver oil, Swordfish, Salmon, Tuna fish, fortified orange juice, fortified milk or yoghurt)
• Select Selenium-Rich Foods (Brazil nuts, Tuna, Sardines, enriched Macaroni, Beef steak and Turkey)
• Include Omega-3 Fatty Acids.
• Your Weight and Lifestyle Matter, Too.
what to eat

The following foods could help in reducing depression as follow:

1- Eat whole grains help you to have some good mood effects.

2- High intakes of fruit and vegetables, help in reducing depression risk\textsuperscript{14}.

2- The fish and fish oil (Omega – 3) appear to have wide-ranging medical uses, they may have positive effect on depression\textsuperscript{15, 16, 17, 18}.
Foods and Depression ......Cont

Get the right balance of fats, our brains are made of around 50% fat, and our cells need fats to maintain their structures, therefore an adequate supply of fats are needed to maintain health.

For good mental health, Its supposed to consume 1 omega 3- To 1 omega-6, but USA people consume 1 from omega-3 and 16 from omega-6, which is destructing to the brain health.
Foods and Depression……Cont

Diet-induced changes in the gut *microbiota* such as **plain** Yoghurt and *Activia* Greek yogurt could improve on stress-related behaviors including anxiety and depression.$^{19, 20}$
Foods That May Contribute to Your Depression, and should be avoided

1. Refined sugar
2. Artificial sweeteners
3. Processed food
4. Hydrogenated oils
5. Foods high in sodium
6. Alcohol
7. Coffee, cola, energy drinks
Some micro nutrient are important for depression

The following micro nutrients and play roles in depression as follow:

**Vitamins:** B vitamins, Vitamin C, vitamin D, B12, and folate.

**Minerals:** Magnesium, zinc and lithium

**Amino acids:** Tryptophan, S-adenosylmethionine (SAMe)

**Herbs:** St. John's wort
Herbs and Depression

In contrast to anxiolytic drugs, there are herbs and nutrients which naturally effect and even adjust brain chemistry in the absence of many of the side effects experienced with drugs.\textsuperscript{37, 38}

Between 36\% and 42\% of Americans use complementary and alternative medicine (CAM) each year and that persons suffering from depression and anxiety (67\%) use CAM services significantly more than do their nonanxious and nondepressed counterparts (39\%).\textsuperscript{39}
Meals for Protecting from Depression
Mediterranean Seafood Stew meal

**Ingredients**
2 teaspoons olive oil; 1/2 cup mix (celery, kale and thyme), chopped; 1 medium carrot, chopped; 1 small onion, chopped; 1 medium garlic clove, minced; 2 1/2 cups fat-free, low-sodium chicken broth; 1 14.5-ounce can no-salt-added diced tomatoes, undrained; 2 tablespoons no-salt-added tomato paste; Pinch (about 1/8) teaspoon salt; Pinch (about 1/8) teaspoon pepper; 1 medium zucchini, chopped; 12 ounces cod or other mild white fish fillets, rinsed and patted dry, cut into 1-inch cubes

**Cooking Instructions**
In a large saucepan, heat the oil over medium-high heat, swirling to coat the bottom. Cook the celery, carrot, onion, and garlic for 5 minutes, or until soft, stirring frequently.

Stir in the broth, tomatoes with liquid, tomato paste, thyme, salt, and pepper. Bring to a boil, still on medium high. Reduce the heat and simmer, covered, for 8 to 10 minutes, or until the vegetables are very tender, with no crispness remaining.

Stir in the zucchini. Cook for 3 minutes, or until almost tender-crisp.
Stir in the fish. Cook for 2 to 3 minutes, or just until it flakes easily when tested with a fork.
Follow - Mediterranean Seafood Stew meal

Nutritional Analysis Per serving
Calories Per Serving 149; Total Fat 3.0g; Saturated Fat 0.5g; Trans Fat 0.0g; Polyunsaturated Fat 0.5g; Monounsaturated Fat 1.5g, Cholesterol 32mg; Sodium 201mg; Carbohydrates 13g; Fiber 3g;; Sugar 8g; Protein 17g .

For Depression: each of, leafy vegetables, fish, garlic and onion play a role in protecting against depression and give good mood.
Beet, Citrus and Avocado Salad (Yield: Serves four)

Ingredients For the dressing: 2 tablespoons lemon or lime juice; 1 teaspoon cumin seeds lightly toasted and ground; 1 teaspoon curcumin; pinch Salt and freshly ground pepper; 1/2 teaspoon Dijon mustard; 1 tablespoon walnut oil; 2 tablespoons canola oil.

Ingredients For the salad: 1 bunch beets (about 1 pound), scrubbed and roasted; 1 pink grapefruit; 1 medium-size or large ripe but firm Hass avocado, sliced; 2 tablespoons slivered fresh basil.

Preparation
1. Mix together the lemon or lime juice, the ground cumin seeds, salt, pepper and Dijon mustard. Whisk in the walnut oil and canola oil.
2. Peel the roasted beets, and slice or cut in wedges. Toss with 2 tablespoons of the dressing.
3. Cut away both ends of the grapefruit so that it sits flat on your work surface. Cut the skin and pith completely away from the fruit, following the natural curve of the fruit from top to bottom. Hold the grapefruit in your hand over a bowl to catch the juice, and cut away each segment from between the membranes.
4. Arrange the beets in the center of a platter, and surround with the grapefruit and avocado slices. Drizzle on the remaining dressing, and drizzle any grapefruit juice in the bowl over the grapefruit and avocado. Sprinkle on the basil, and serve.

Advance preparation: Roasted beets will keep for three to five days in the refrigerator. If you have them on hand, the salad is very quickly thrown together.
Follow- Beet, Citrus and Avocado Salad

Nutritional information per serving: 231 calories; 18 grams fat; 2 grams saturated fat; 0 milligrams cholesterol; 18 grams carbohydrates; 6 grams dietary fiber; 77 milligrams sodium (does not include salt added during cooking); 3 grams protein.

For Depression: each of Curcumin, avocado, walnut oil basil has a good role in creating good mood.
End