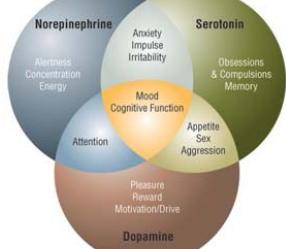


Eating for Brain Health



With
Dr. Ritamarie Loscalzo

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Medical Disclaimer: The information in this presentation is not intended to replace a one-on-one relationship with a qualified health care professional and is not intended as medical advice. It is intended as a sharing of knowledge and information from the research and experience of Dr. Ritamarie Loscalzo, drritamarie.com, and the experts who have contributed. We encourage you to make your own health care decisions based upon your research and in partnership with a qualified health care professional.

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How The Nervous System Works

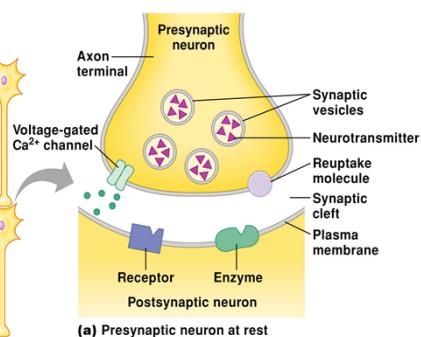


- Brain parts
- Neurons
- Synapses
- Neurotransmitters
- Myelin sheaths

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SYNAPSES

- Can be excitatory or inhibitory

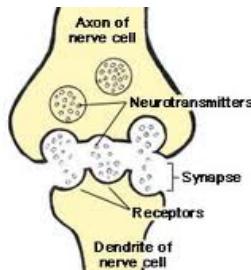


(a) Presynaptic neuron at rest

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Neurotransmitters

- Chemical messengers of the brain
- Location and action varies
- Excitatory or inhibitory



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The Major Neurotransmitters

Inhibitory

- Serotonin
- Dopamine
- GABA
- Glycine

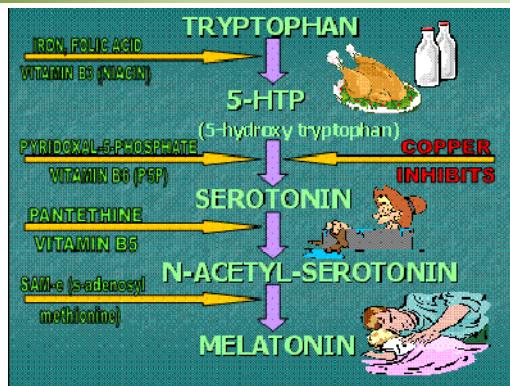


Excitatory

- Glutamine
- Acetylcholine
- Norepinephrine

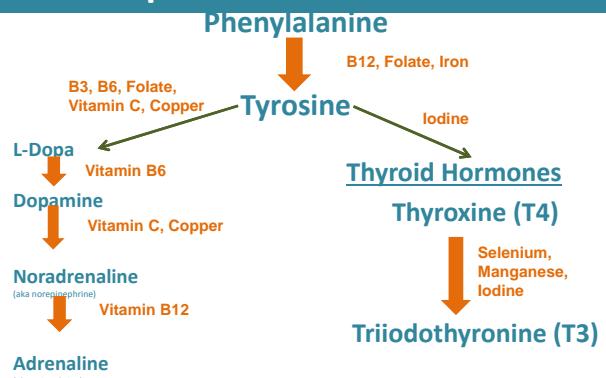
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Serotonin Metabolism



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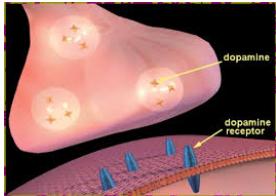
Dopamine Metabolism



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Dopamine Deficiency Symptoms

- Apathetic depression
- Lack of energy
- Lack of drive
- Easily bored
- Lack of focus
- Inability to concentrate
- ADD



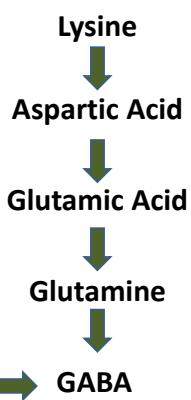
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GABA (gamma-Aminobutyric acid)

- Inhibitory CNS neurotransmitter
- Functions outside nervous system: intestine, stomach, pancreas, Fallopian tube, uterus, ovary, testis, kidney, urinary bladder, lung, and liver
- Regulates muscle tone
- Calms nervous system
- Affects attention and memory



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What Can Go Wrong

- Depression
- Anxiety
- Lack of focus
- Memory problems
- Bipolar
- Schizophrenia



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8 Essential Amino Acids: How They Affect Energy and Mood

- **Tryptophan:** Serotonin and Melatonin
- **Methionine:** Glutathione
- **Phenylalanine:** Tyrosine, Dopamine, Norepinephrine
- **Threonine:** Glycine
- **Valine:** Energy
- **Leucine:** Energy
- **Isoleucine:** Energy
- **Lysine:** Glutamine



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Neurotransmitter And Precursors Amino Acids

- Phenylalanine → tyrosine
- Tyrosine → dopamine, norepinephrine, epinephrine, and thyroid hormone
- Tryptophan → serotonin and melatonin
- Glutamic acid → GABA
- GABA (gamma aminobutyric acid)
- Taurine → GABA



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Nutrient Deficiencies That Can Lead to Neurotransmitter Imbalances

- B1
- B3
- Folate
- B12
- B6
- C
- D
- E
- Chromium
- Iron
- Choline



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Serotonin Deficiency

Substances That Provide Relief

- Sweets
- Starch
- Tobacco
- Chocolate
- Alcohol
- Marijuana
- Ecstasy
- Prozac
- Paxil
- Effexor
- Celexa



Possible Amino Acid Solutions

- 5-HTP
- Or
- L-Tryptophan

With

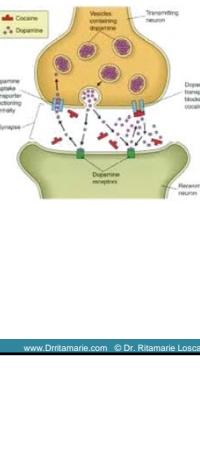
- Vitamin B6 as P-5-P
- L-Tyrosine

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Dopamine Deficiency

Substances That Provide Relief

- Sweets
- Starch
- Aspartame
- Chocolate
- Alcohol
- Marijuana
- Caffeine
- Cocaine
- Speed
- Tobacco
- Wellbutrin
- Ritalin
- Adderall



Possible Amino Acid Solutions

- Tyrosine
- Or L-phenylalanine, especially if also symptoms of low endorphins: sensitive to pain, cry easily, cravings for comfort foods or drugs
- With Vitamin B6

GABA Deficiency

Substances That Provide Relief

- Sweets
- Starch
- Alcohol
- Marijuana
- Tobacco
- Valium
- Neurotin
- Clonopin



- GABA
- Possibly with taurine and/or glycine

Brain-Friendly Diet and Lifestyle

- Whole foods, antioxidant-rich diet high in greens, fruits, and vegetables
- Fat balance: Omega-3s daily (flax, hemp, chia seeds, walnuts, purslane, and algae) and avoiding heated and processed fats
- Avoidance of environmental toxins
- Sugar balance
- Be wary of medications
- Manage stress



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