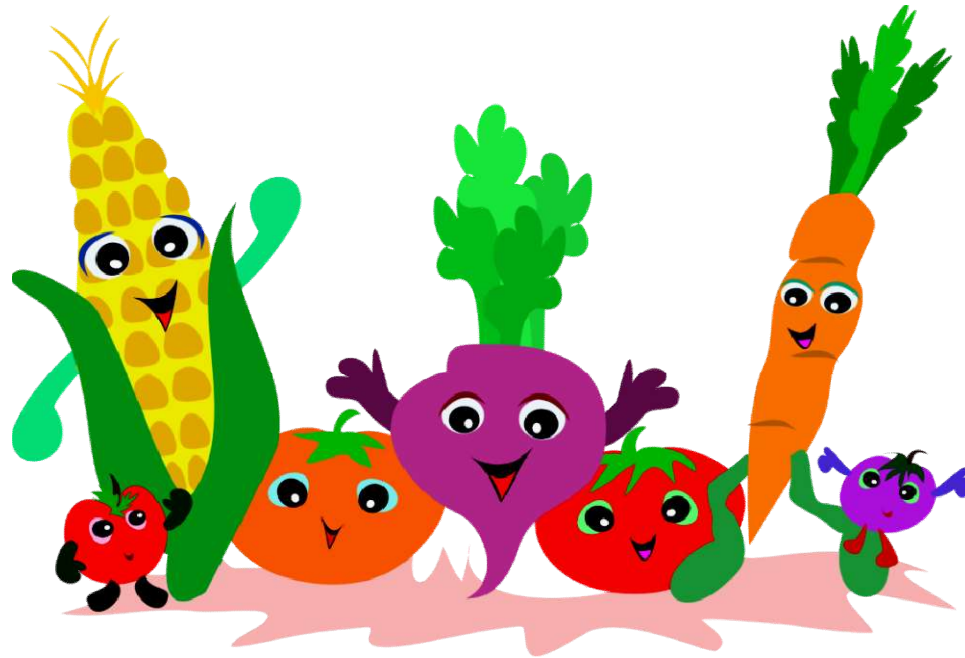
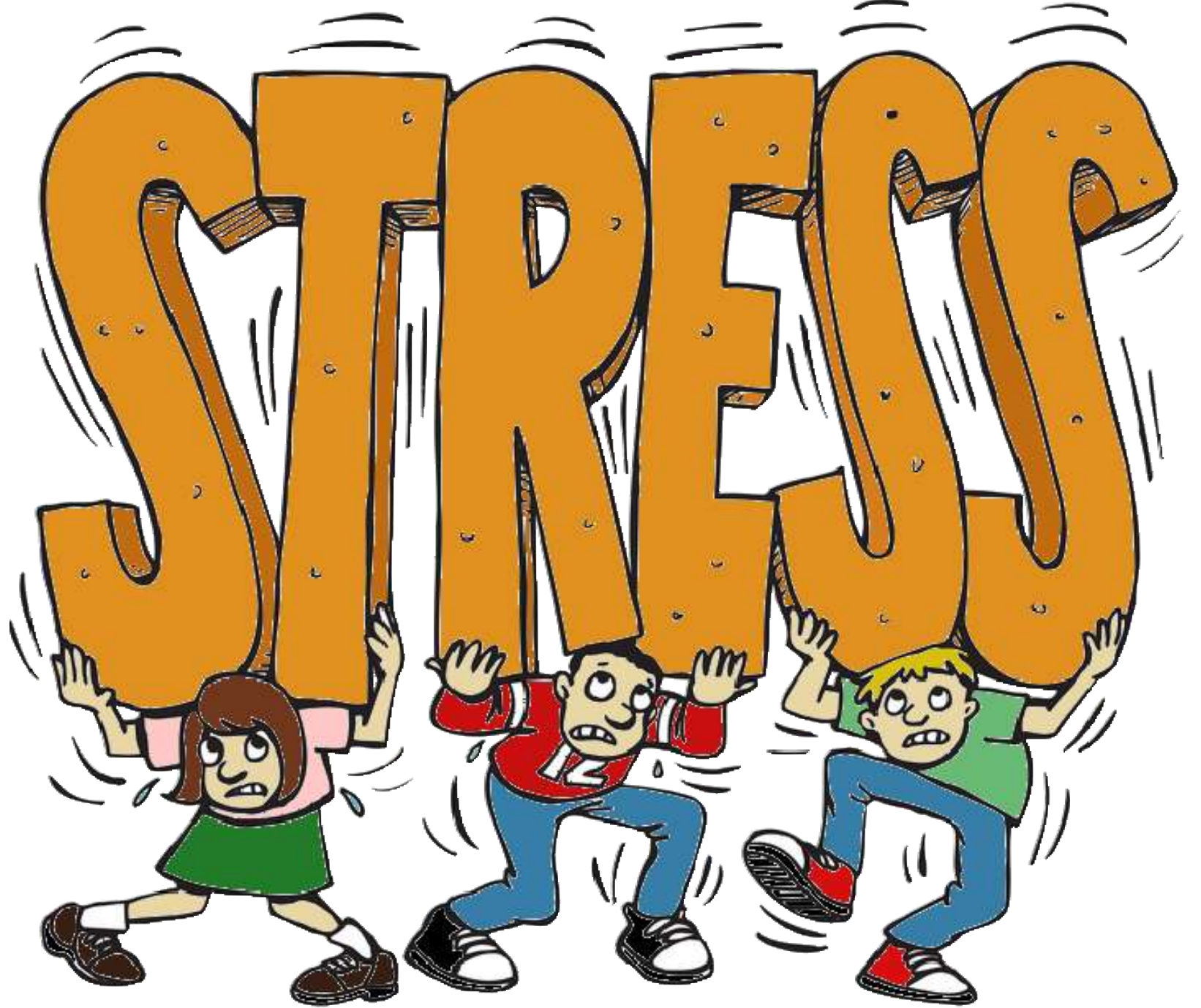


# Managing Stress Through Nutrition – A Possibility?



**Dr. Rohini Sharma**

**Consultant – Food Technologist & Nutritionist**



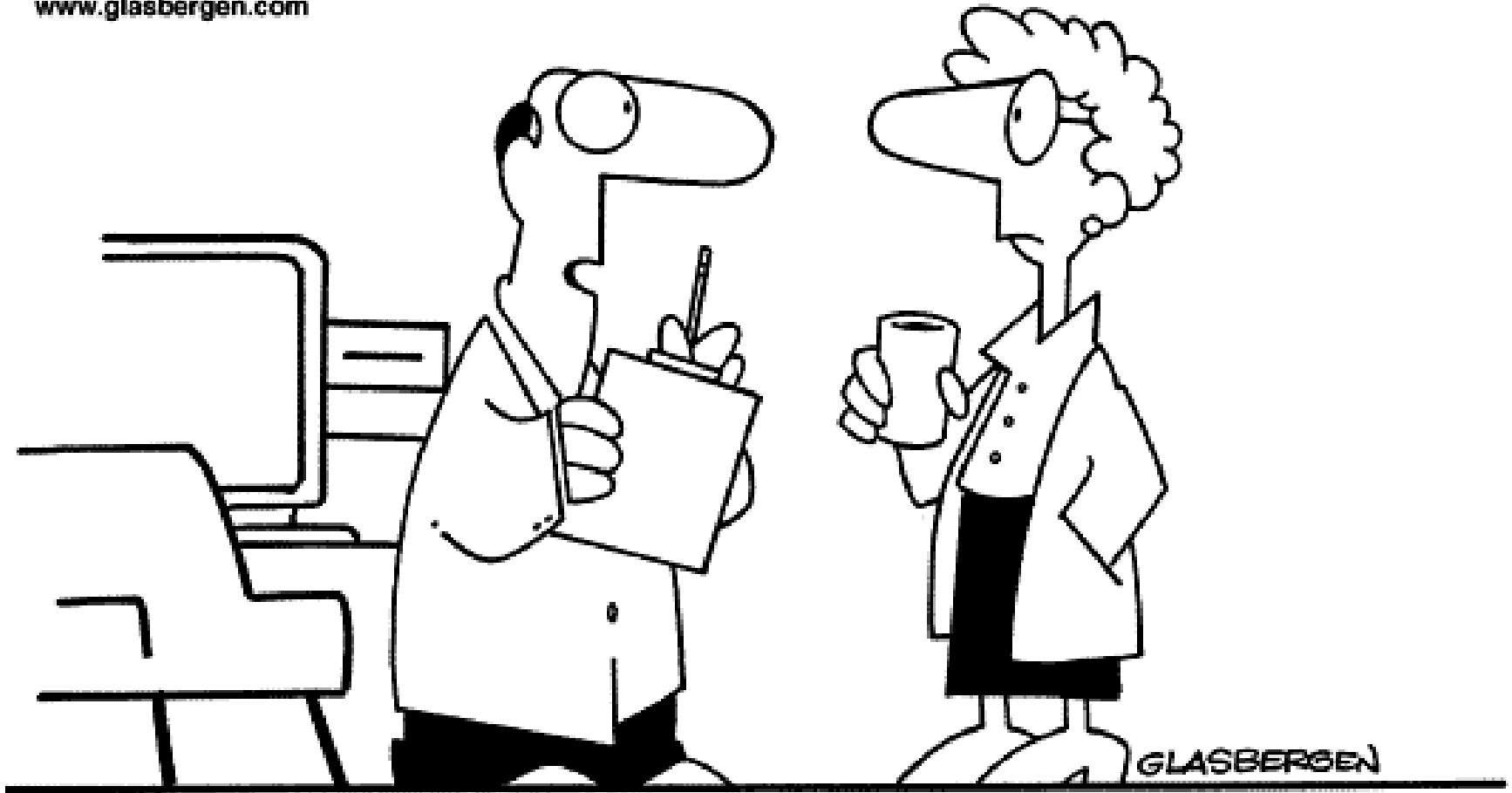


# WHAT IS STRESS ?



Stress is the body's response to any physical or emotional changes in life.

© 1996 Randy Glasbergen.  
www.glasbergen.com



**“According to the latest research, the average human body is 20% water and 80% stress.”**

# TYPES OF STRESS

**POSITIVE STRESS**

**OR**

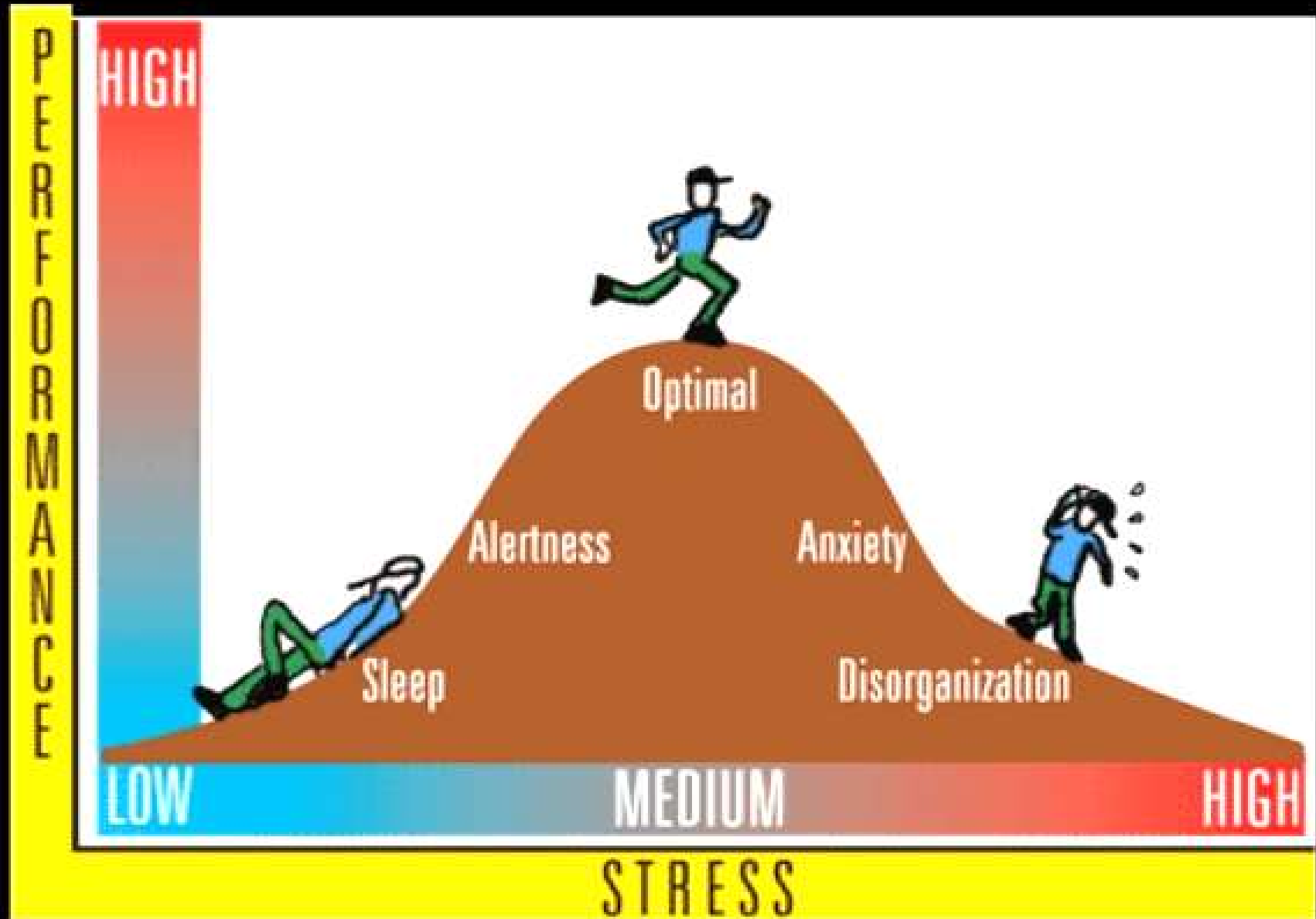
**EUSTRESS**

**NEGATIVE STRESS**

**OR**

**DISTRESS**

# Stress Performance Connection



# EUSTRESS



Eustress or positive stress occurs when your level of stress is high enough to motivate you to move into action to get things accomplished.



# DISTRESS

Distress or negative stress occurs when your level of stress is either too high or too low and your body and/or mind begin to respond negatively to the stressors.





# Stress Varies from Person to Person



There is no single level of stress that is optimal for all people. Some are more sensitive owing to experiences in childhood, the influence of teachers, parents and religion

# The classroom scolding scenario



# THE AFTER EFFECT



# Acute (Short Term) Stress

## Prepare you for Flight or Flight



# SYMPTOMS OF ACUTE STRESS

Acute stress is usually for short time and may be due to work pressure, meeting deadlines pressure or minor accident, over exertion, increased physical activity, searching something but you misplaced it, or similar things.

Symptoms of this type of tension are headaches, back pain, stomach problems, rapid heartbeat, muscle aches or body pain etc.

# CHRONIC STRESS (Long Term Stress)



Chronic stress is a prolonged stress that exists for weeks, months, or even years. This stress is due to poverty, broken or stressed families and marriages, chronic illness and successive failures in life. People suffering from this type of stress get used to it and may even not realize that they are under chronic stress. It is very harmful to their health

# Impact of Stress

**Stress can be characterized as:**

- **Cognitive**
- **Emotional**
- **Physical or**
- **Behavioral**



# Symptoms of Stress

- Negative outlook, excessive worrying, moodiness, irritability, agitation, inability to relax, feeling lonely, isolated or depressed
- Aches and pains (head, neck and back), diarrhoea or constipation, nausea, dizziness, chest pain, rapid heartbeat, eating too much or not enough, sleeping too much or not enough
- Social withdrawal, procrastination or neglect of responsibilities, increased alcohol, nicotine or drug consumption, and nervous habits such as pacing about and nail-biting.



# Stress and Food – The Connection

- Agaras and Hamner (2007) suggested that most of the eating disorders begin in adolescence during puberty.
- Disordered eating includes dieting, food restriction, binge eating and purging behaviours.
- Disorders in eating patterns fall into three broad categories, namely Anorexia Nervosa, Bulimia Nervosa and Binge Eating Disorder.

# Psychological aspects of Eating Disorders

Research indicates that the psychological underlying factors are:

- **Low self esteem**
- **Loneliness**
- **Moodiness**
- **Emotional withdrawal**
- **Stress, anxiety and depression**

*Rosenberg (1965)*



**"I'm on a low-carb diet.  
Whenever I feel low, I eat carbs!"**

# So why do we crave certain foods when stressed?

The answer lies in our **Brain** that produces **Neurotransmitters** that make us feel relaxed or rewarded.

Imagine yourself eating a Chocolate, potato chips or a burger dripping with mayonnaise.....

There is a surge of **neurotransmitters like Serotonin and Dopamine** that makes us reach out for typical foods when stressed

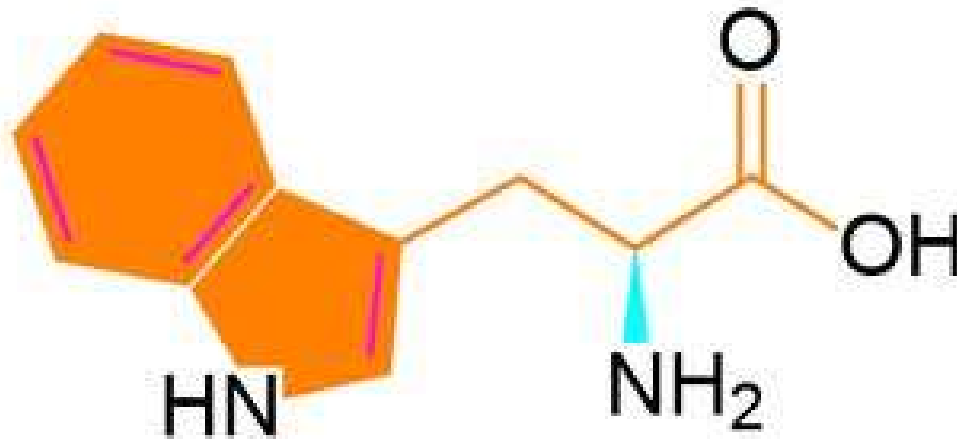
# Serotonin

- A **neurotransmitter** produced in our brain
- Helps in modulation of **anger, appetite, sleep and mood**, etc
- Is found to be very low in people diagnosed with **depression**
- Plays a major role in Stress reduction and controlling the symptoms associated with **anxiety**.
- Further converts into **Melatonin**, a **neuro hormone** in the brain to regulate the **Circadian Rhythm** – The sleep and waking cycle of the body

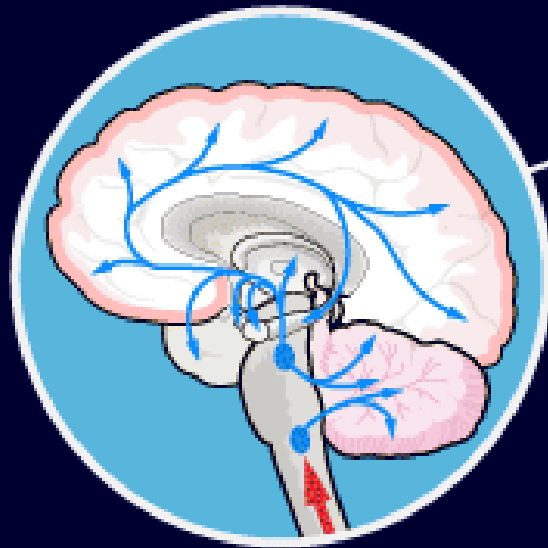
# Serotonin – dependence on diet

## Tryptophan:

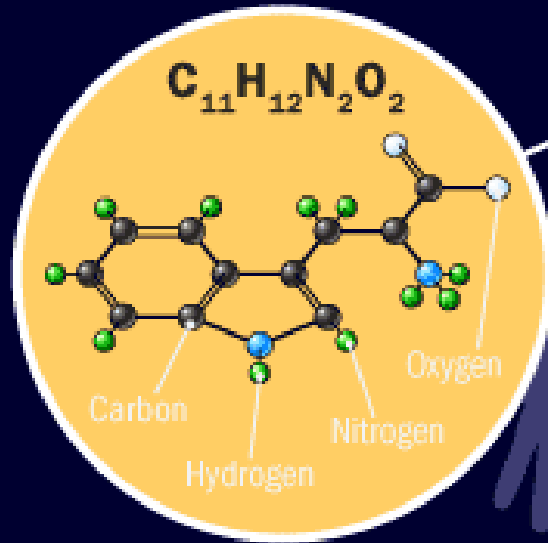
- An essential aminoacid
- Is the sole precursor of Serotonin in the brain



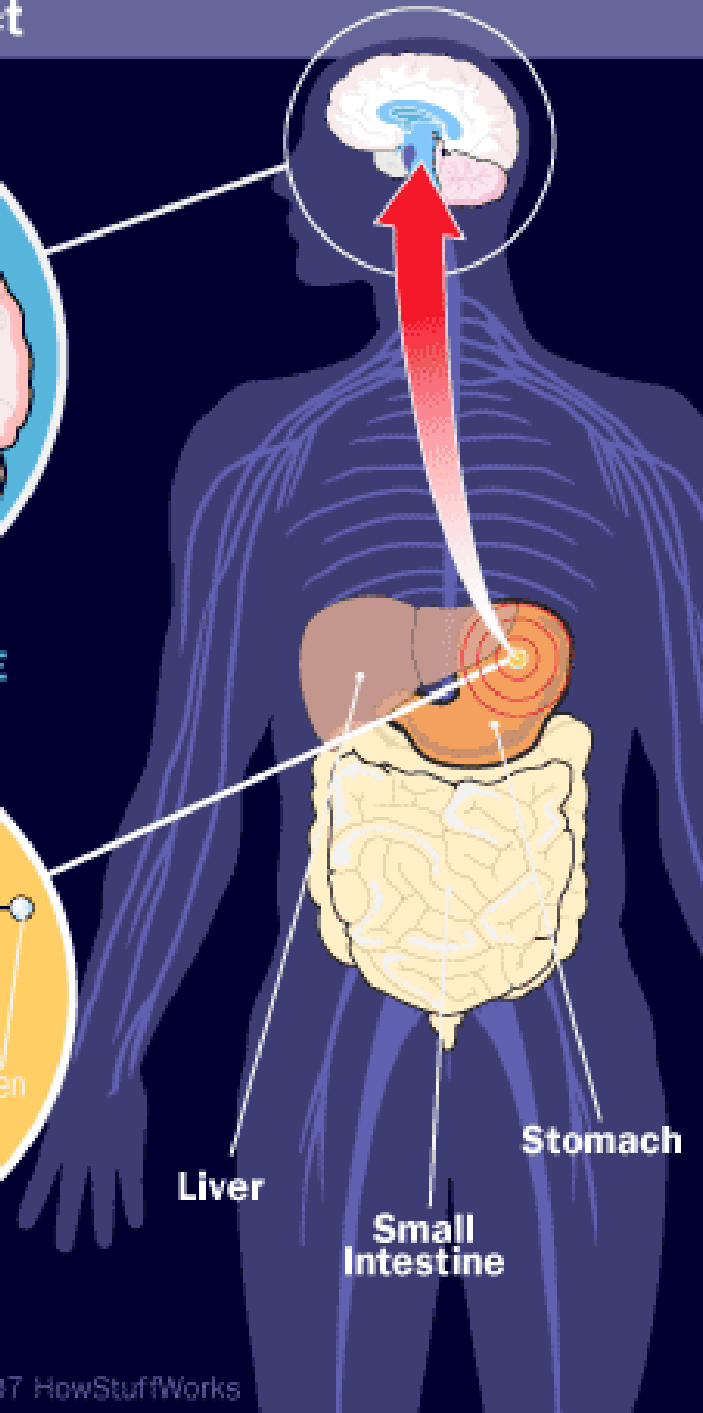
# The Tryptophan Effect



SEROTONIN RELEASE



TRYPTOPHAN



# Serotonin – Limitation....

- A normal person's diet provides more than the regular RDA of Tryptophan
- However, the availability of tryptophan for production of Serotonin, is impacted by presence of certain other amino acids.



# **Serotonin – Limitation....**

The ratio of **Tryptophan to 5 Large Neutral Amino Acids (LNAA's)** (Valine, Isoleucine, Leucine, Tyrosine and Phenylalanine) determines level of Serotonin production in the brain.

# Serotonin – Limitation....

- Tryptophan needs to **compete** with the 5 Large Neutral Amino Acids (LNAA), for the **Blood Brain Barrier (BBB) transporter**
- Hence, **bioavailability** of tryptophan for transport across the BBB is expressed as a ratio of tryptophan to the sum of its competing amino acids.

# Stress Busting Foods

- Sweet potato
- Tapioca
- Potato
- Linseed
- Onion
- Cashew nut
- Strawberry
- Drumstick leaves
- Colocasia
- Cabbage
- Bajra
- Cauliflower
- French beans
- Pumpkin
- Banana
- Spinach
- Fenugreek leaves
- Amaranth
- Beetroot
- Oatmeal

# Stress Busting Foods

- Wheat whole
- Agathi
- Mutton
- Rice
- Avocado
- Soyabean
- Yam
- Milk
- Ragi
- Sesame seeds
- Black gram dal
- Egg ( hen)
- Walnut
- Peas (dry)
- Groundnut
- Brinjal
- Ladies Finger

# Carbohydrates and Stress Reduction

A carbohydrate-rich meal stimulates **insulin secretion** that causes most of the amino acids in the bloodstream, other than tryptophan, to be taken up by the peripheral tissues. The resulting higher ratio of tryptophan to other Large Neutral Amino Acids (LNAAs) leads to a greater transport of tryptophan to the brain.

# Our Ancient Wisdom

## Ayurveda (“Science of Life”)

The ancient Indian System of Health Care represents experiential wisdom of over 5000 years.

Ayurveda describes **3 kinds of “ahar” or diet**:—

- **“Satwik” or calming in nature** - promotes peace and most optimal for good health
- **“Rajasik” or rich and excitatory in nature** - it induces restlessness and disquiet in the body
- **“Tamasik” or aggravating in nature** - it creates sloth, lethargy and stress

# What are these three diets?

***Satvik*** diet consists of fresh fruits, vegetables, tubers, whole grain cereals and nuts

***Rajasik*** diet consists of rich, fried, high calorie foods, and refined grains with large amounts of sugar and salt

***Tamsik*** diet includes animal flesh and intoxicants

# MAKE SMART FOOD CHOICES





## To Conclude.....

- Stress is Omni-present and cannot be avoided
- Food plays a major role in modulating the stress response of a person
- Tryptophan available foods can be included in the diet to ensure adequate Serotonin and Melatonin production in body
- It will reduce stress and anxiety and also improve sleep quality and duration

**Jaisa khayе ann.....waisa hoye mann**



*“Let nothing which can be treated by diet  
be treated by other means”*

*~Maimonides*

**THANK YOU!!**

