PSYCHOSOMATIC DISORDERS

Dr. Rashmin Cholera

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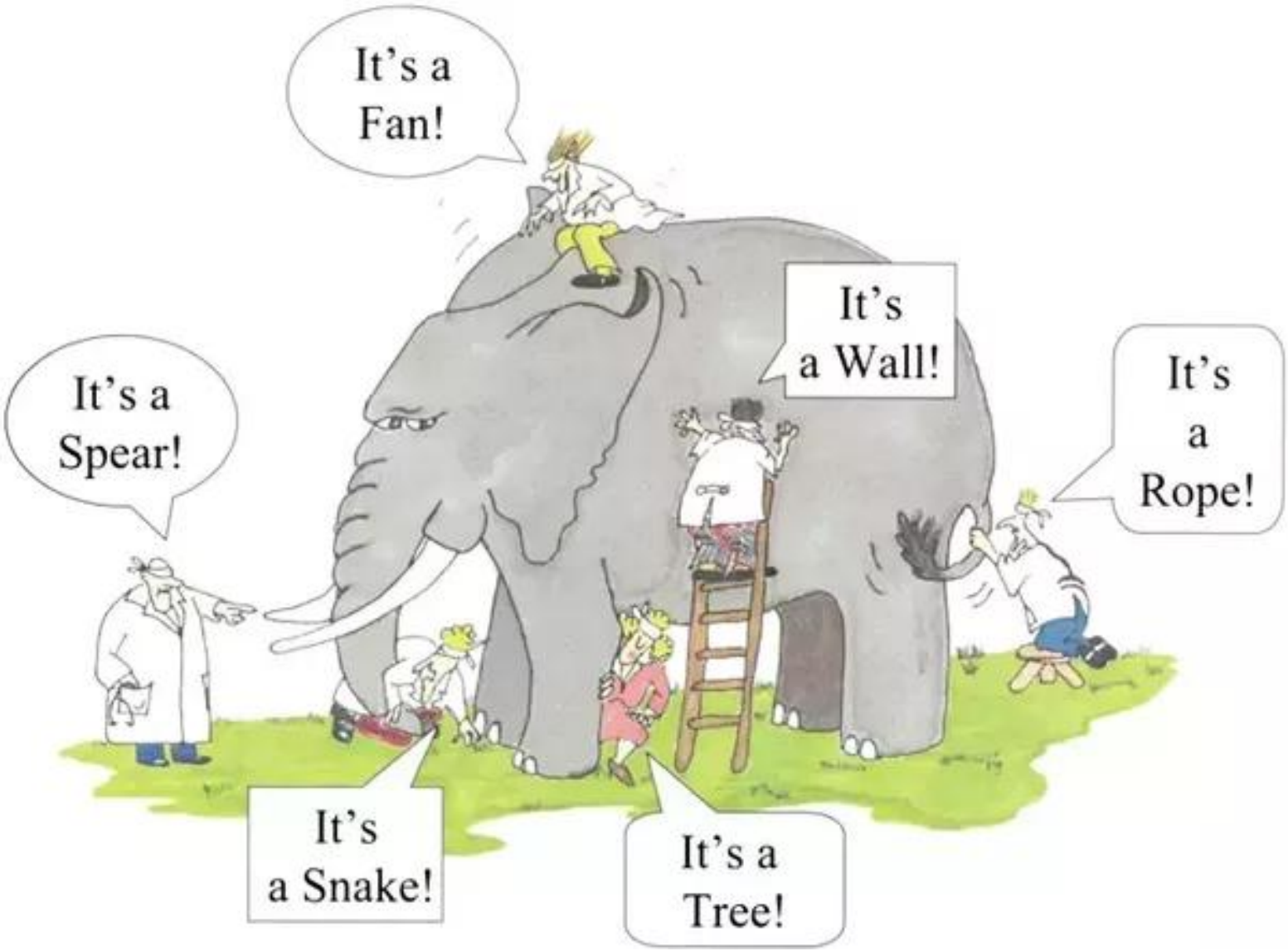

It's a Fan!
It's a Spear!
It's a Wall!
It's a Rope!
It's a Snake!
It's a Tree!

Dr Balwant P Ghatpande, Pune, aged 102

Today's Talk

- Cases
- History of Mind-Body medicine
- Concept of Psychosomatic Disorders
- Role of STRESS
- Psychiatric disorders with somatic symptoms
- Systemic Disorders with psychosomatic overlay

Case Sample 1

46 year old male patient with

- Chest pain
- Constricting feeling of the chest
- Breathlessness
- Palpitations
- Sweating
- Dryness of the mouth
- Nausea / vomiting
- Lightheadedness
- Tingling sensation of the upper extremities

Case Sample 2

53 year old female patient with

- Abdominal pain & cramps
- Increased frequency of defecation
- Straining during bowel movement
- Loose stools, occasionally mucus & blood stained
- Persistent feeling of incomplete evacuation
- Bloating sensation / flatulence
- Decreased appetite
- Weight loss
- Nausea, occasional vomiting

Case Sample 3

55 year old male patient

- Breathlessness / Shallow breathing
- Feeling of suffocation
- Chest pain
- Feeling of constriction of chest
- Excessive sweating
- Giddiness
- Lightheadedness
- Tingling sensation around the mouth & fingers
- Syncope

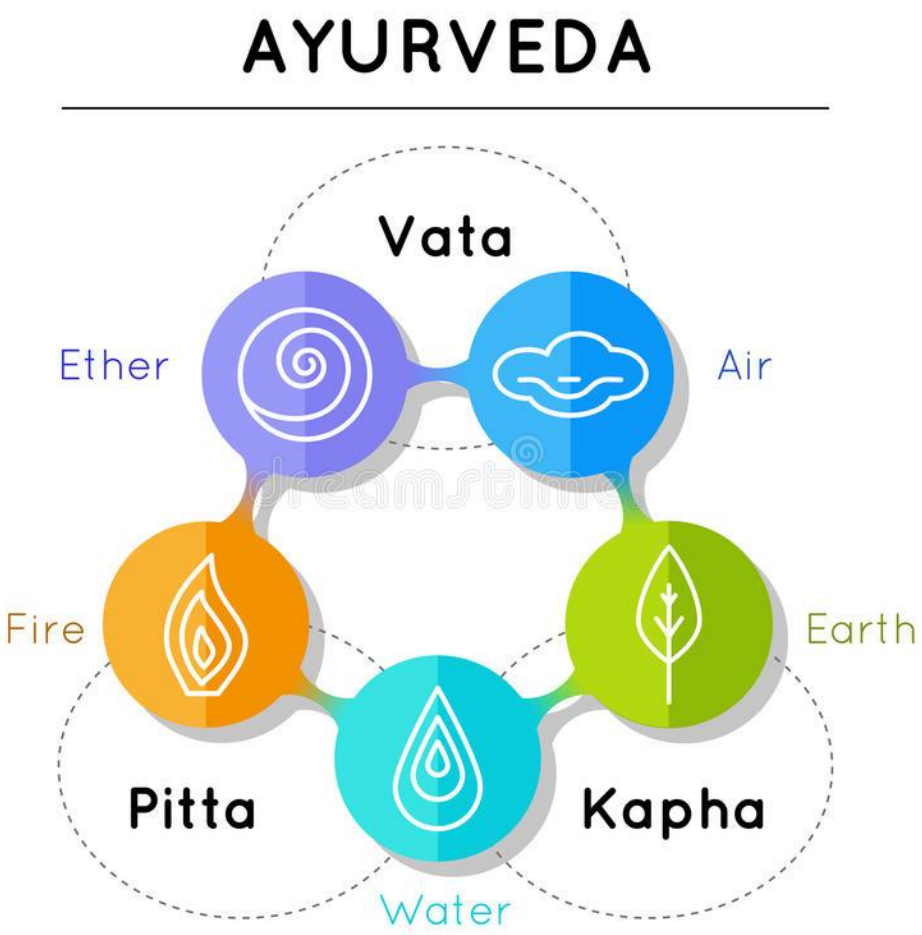
Ancient Greek Medicine

- The ancient Greeks developed the physiocratic school of thought, realizing that maintaining good health and fighting illness depend on natural causes and that health and disease cannot be dissociated from particular physical and social environments nor from human behaviour
- They defined health as a state of dynamic equilibrium between the internal and the external environment
- They took under consideration the physical and social determinants of health

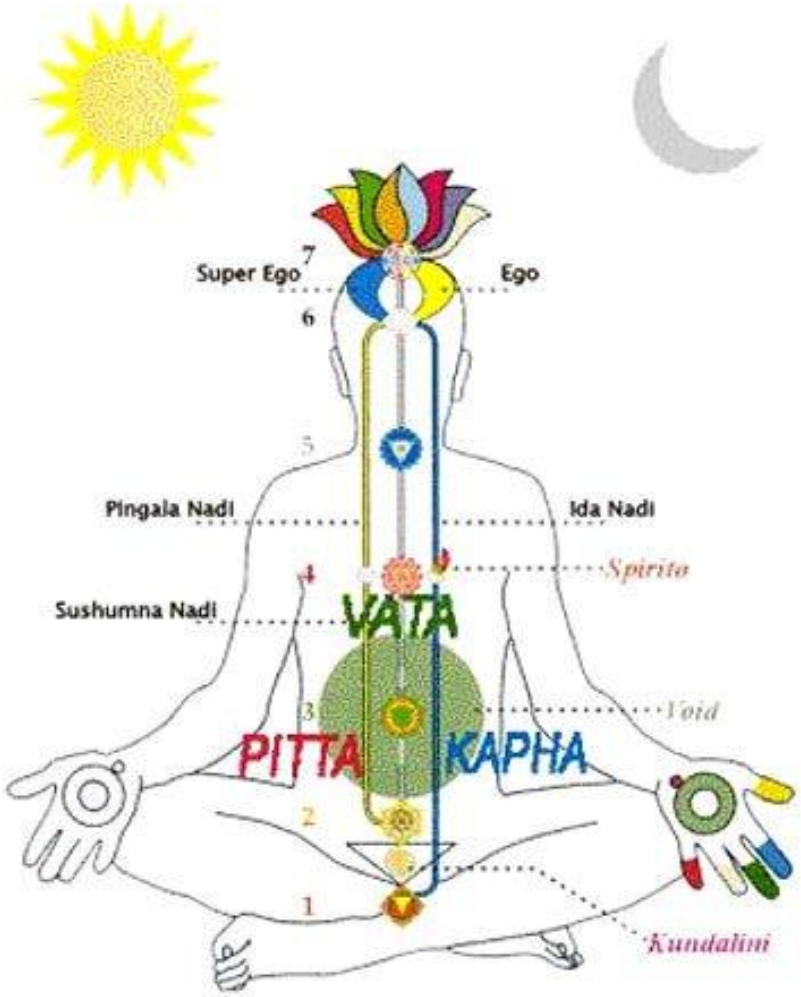
Ancient Greek Medicine

- The ancient Greeks' apprehension of health and illness was based on the theory of the four 'fluids' (blood, phlegm, yellow bile and black bile)
- That concept is premised on the theory of the four elements (fire, earth, water and air) and their four corresponding qualities (heat, dry, humid and cold).
- All these theories have as a starting point the number 4, which was of great significance for Pythagorean philosophy that dominated the pre-Socratic period

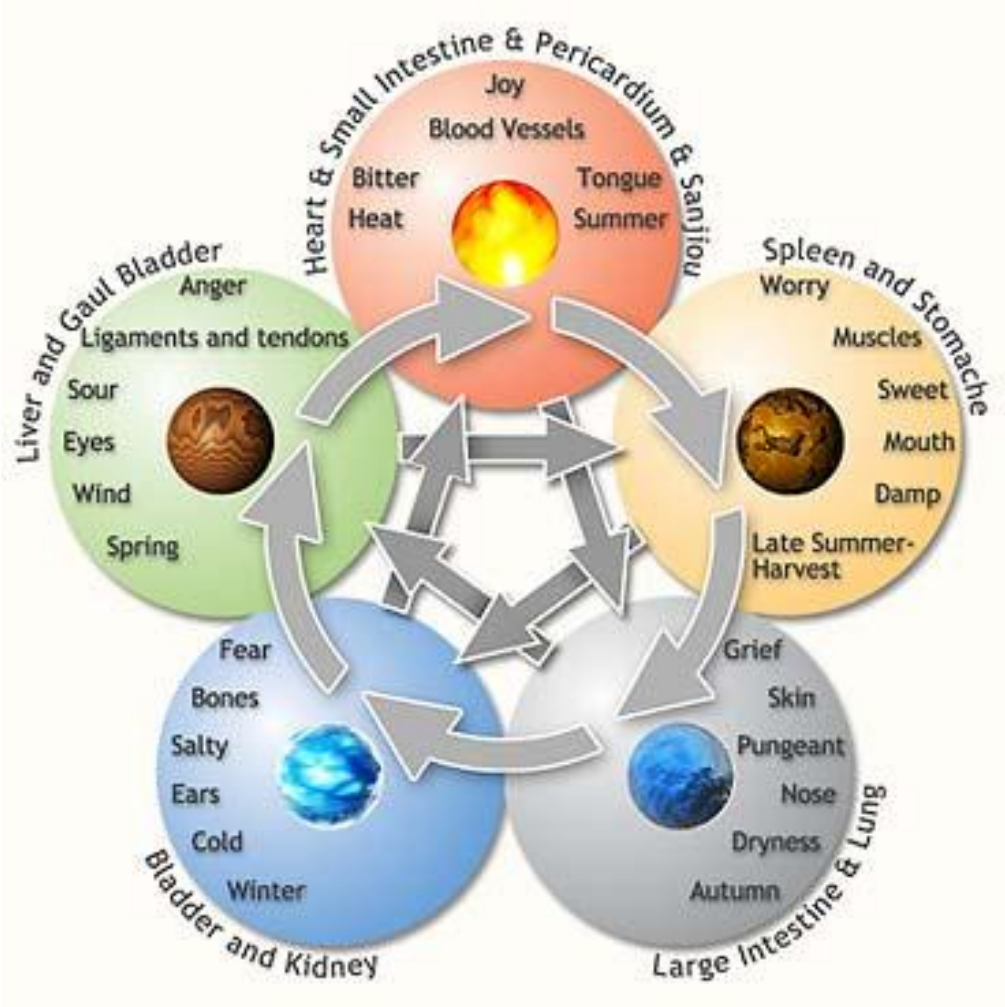
Traditional Indian Medicine



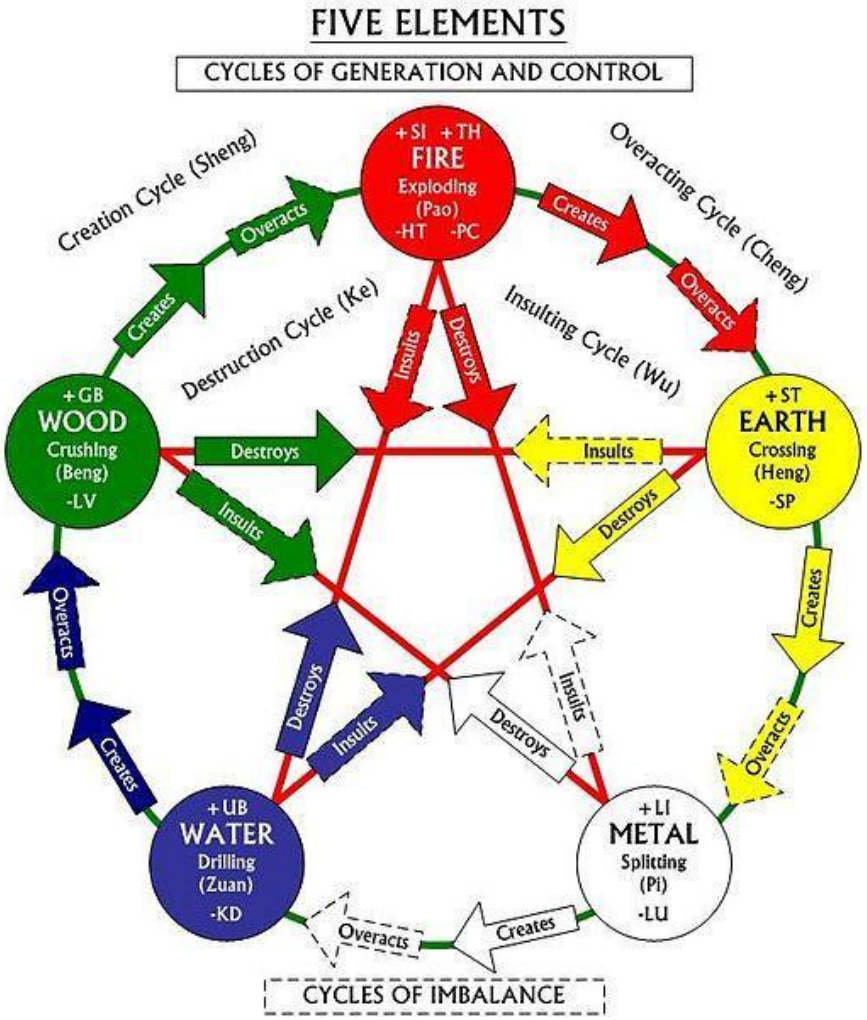
Ayurveda - Prakruti



Ayurveda - Vikruti



Traditional Chinese Medicine



Pre - Modern Medicine

- Relied heavily on the concept of a balance of mental well-being & physical health
- Sigmund Freud was the principal theoretician to bring together psyche & soma in early 20th century
- Effectively, concepts of Hysteria & Hysterical Paralysis came about
- Often, may misdiagnose neurological conditions with an overlay of stressful life events as hysterical as well

Modern Medicine

- Advancements in the understanding of the human brain, neurotransmitter systems, motor & sensory neuronal pathways
- Advancements in physical diagnostic tools, laboratory testing methodology, imaging tools
- Advancement in structural neuro-diagnostic tools (CT, MRI) & Functional imaging
- Understanding of immunology, genetics, neuro-endocrinal systems & pathways

Modern Medicine

Flip Side:

- Over-reliance on diagnostic tools
- Tunnel vision
- Over-simplistic, diagnosis-centric approach
- Treatment focused on eliminating diagnostic entity rather than the symptoms / complaints
- Treatment approach for communicable diseases replicated for non-communicable diseases

Modern Medicine

- Husband (Text Message): “Hi honey. I had a bad accident. A truck hit my car from the side. I was thrown out of the car about 10 feet away.
  - Luckily, Teena got me to the hospital in time.
  - I’m admitted to the emergency ICU. I have a bad head injury. But, they aren’t suspecting any serious damage. Though, I have 3 broken ribs, hip fracture, a broken wrist & cuts on my face. But, don’t worry. I should be fine.”
- Wife’s reply: “Who’s Teena?”

Illness Based Approach

- Applicable about 50 years back, when communicable diseases were rampant. Out-dated now
- Treatment was diagnosis / illness centric
- Often, focused on eliminating the external offending agent (bacteria / virus / parasite)
- Usually resolved most of the symptoms
- In non-communicable diseases, the syndrome of symptoms, causality & treatment outcome can seldom be explained by the ‘primary diagnosis / illness’ in question

Illness Based Approach

"GOOD NEWS. YOUR CHOLESTEROL HAS REMAINED THE SAME, BUT THE RESEARCH FINDINGS HAVE CHANGED"

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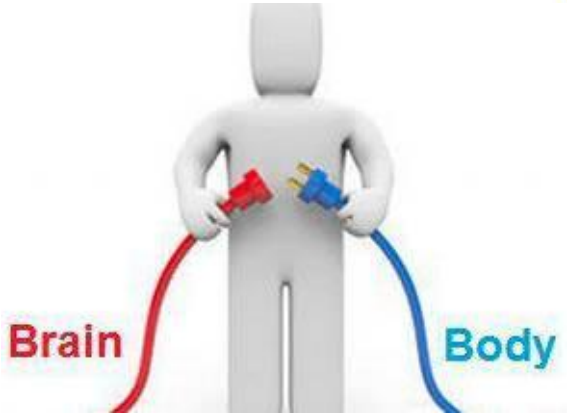
Psychosomatic Approach

- Chronic disease is now the principal cause of disability and consumes almost 80% of health expenditures
- Yet, current health care is still conceptualized in terms of acute care perceived as processing of a product for a diagnostic entity derived by the tests conducted
- In reality, in health care, the product is clearly health and the patient is one of the producers, not just a customer

Psychosomatic Concept

- The term psychosomatic is derived from the Greek words psyche (soul) and soma (body).
- The term literally refers to how the mind (brain) affects the body.
- The goal of treatment should be the attainment of individual goals, and the identification and treatment of all modifiable biological and non-biological factors



Psychosomatic Concept

- There is a link between life events and a number of medical disorders, encompassing endocrine, cardiovascular, respiratory, gastrointestinal, autoimmune, skin, and neoplastic disease
- Allostasis: the ability of the organism to achieve stability through change
- The concept of allostatic load refers to the wear and tear that results from either too much stress or from insufficient coping, such as not turning off the stress response when it is no longer needed

The Psychosomatic Conceptual Framework Versus Evidence-based Medicine

- Gap between clinical guidelines developed by EBM and the real world of clinicians and patients
- Methodological triad for clinical assessment
  - Observation (outer-viewing),
  - Introspection (inner-viewing),
  - Dialogue (inter-viewing)

Which of these is true?

- Stress response is physiological
- Stress response is pathological
- Stress is essential to human functioning
- All of the above
- None of the above

What happens when one is exposed to stress?

- Cortisol levels increase
- Prolactin levels increase
- Insulin levels decrease
- All of the above
- None of the above

STRESS

- STRESS is any action or situation, which places special physical or psychological demands on a person.
- STRESS could also be described as the state of dynamic tensions, created when one responds to perceived or real demands and pressures, from outside, as well as within.

STRESS

- The physical, environmental and social causes of the stress state are termed “STRESSORS”.
- If the “stress” levels exceed our ability to cope, it becomes “DISTRESS”.
- What most people describe in everyday parlance as stress, is actually “DISTRESS”, or bordering on it.

Is Stress essential?

- Yes
- No
- Don’t know

WHAT DO STRESSORS DO TO THE BODY?

Hans Selye (1956) described the body's response to stressors, which is known as the

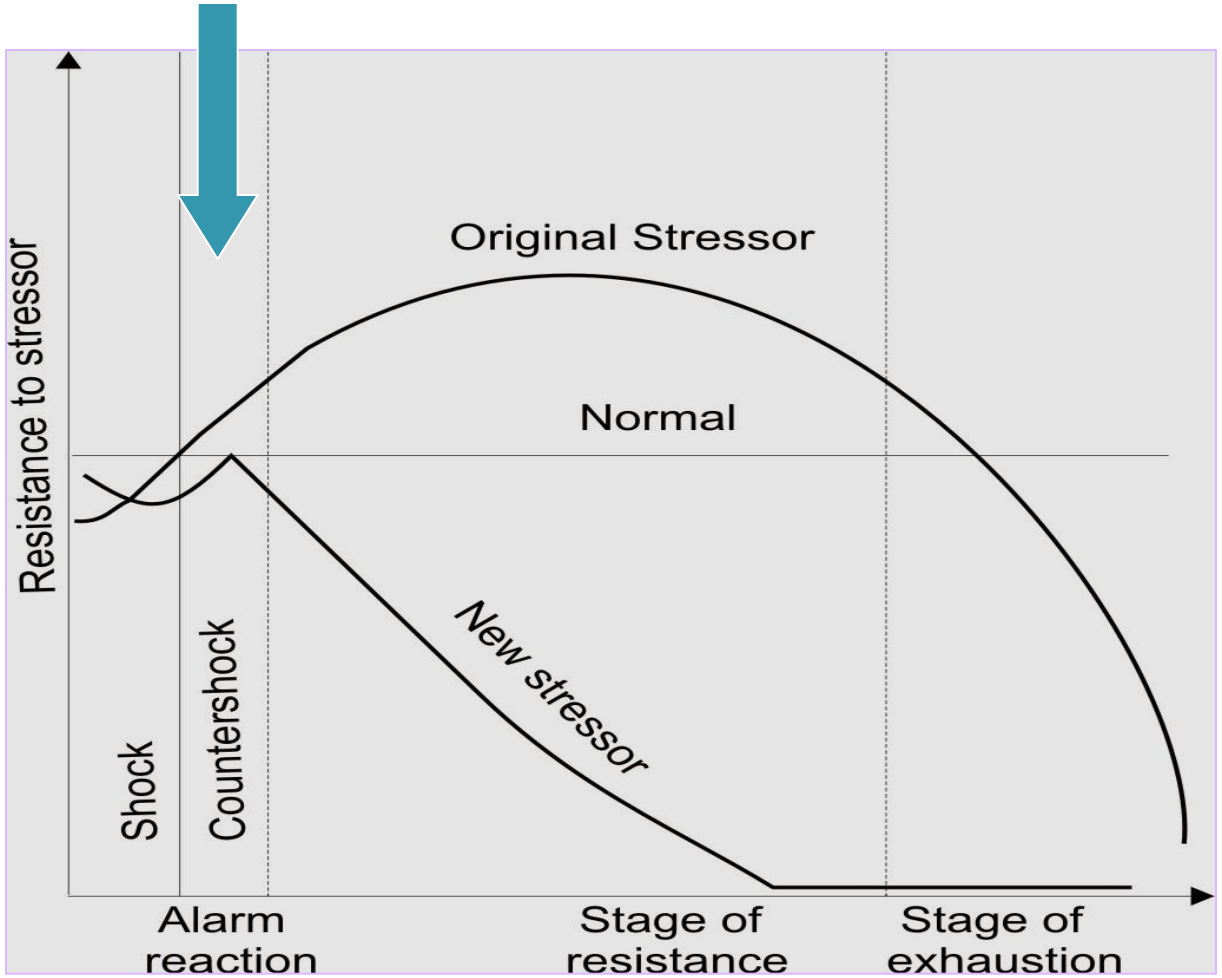
“General Adaptation Syndrome”

This has 3 stages……. .

- The Alarm reaction
- The stage of resistance
- The stage of exhaustion

General Adaptation Syndrome

The Alarm Reaction

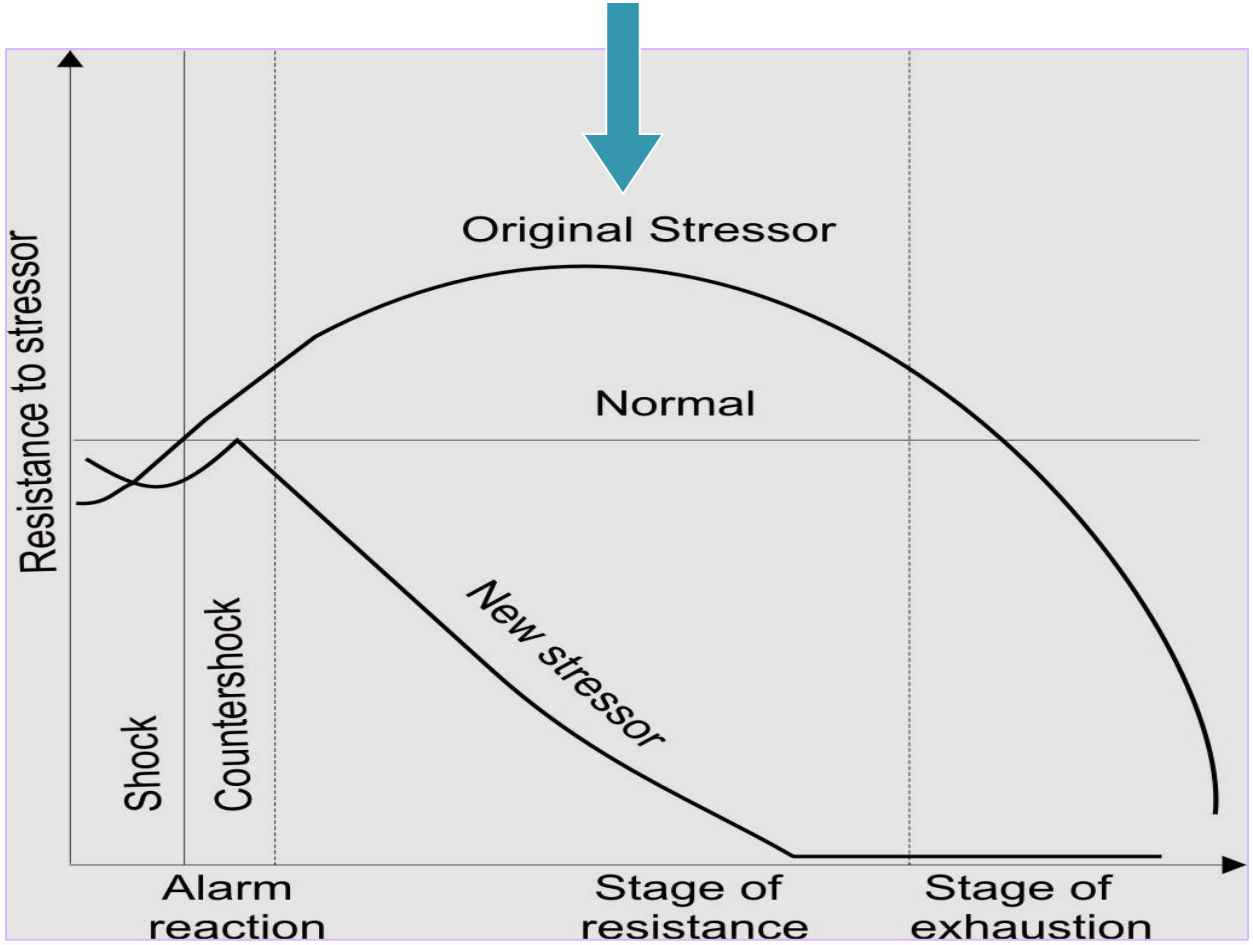


General Adaptation Syndrome
The Alarm Reaction

- The Prompt responses of the body, many of them mediated by the sympathetic nervous system, especially adrenaline, prepare us to cope with the stressor, here and how.
- This is the “Flight or Fight” response.

General Adaptation Syndrome

The Stage of Resistance

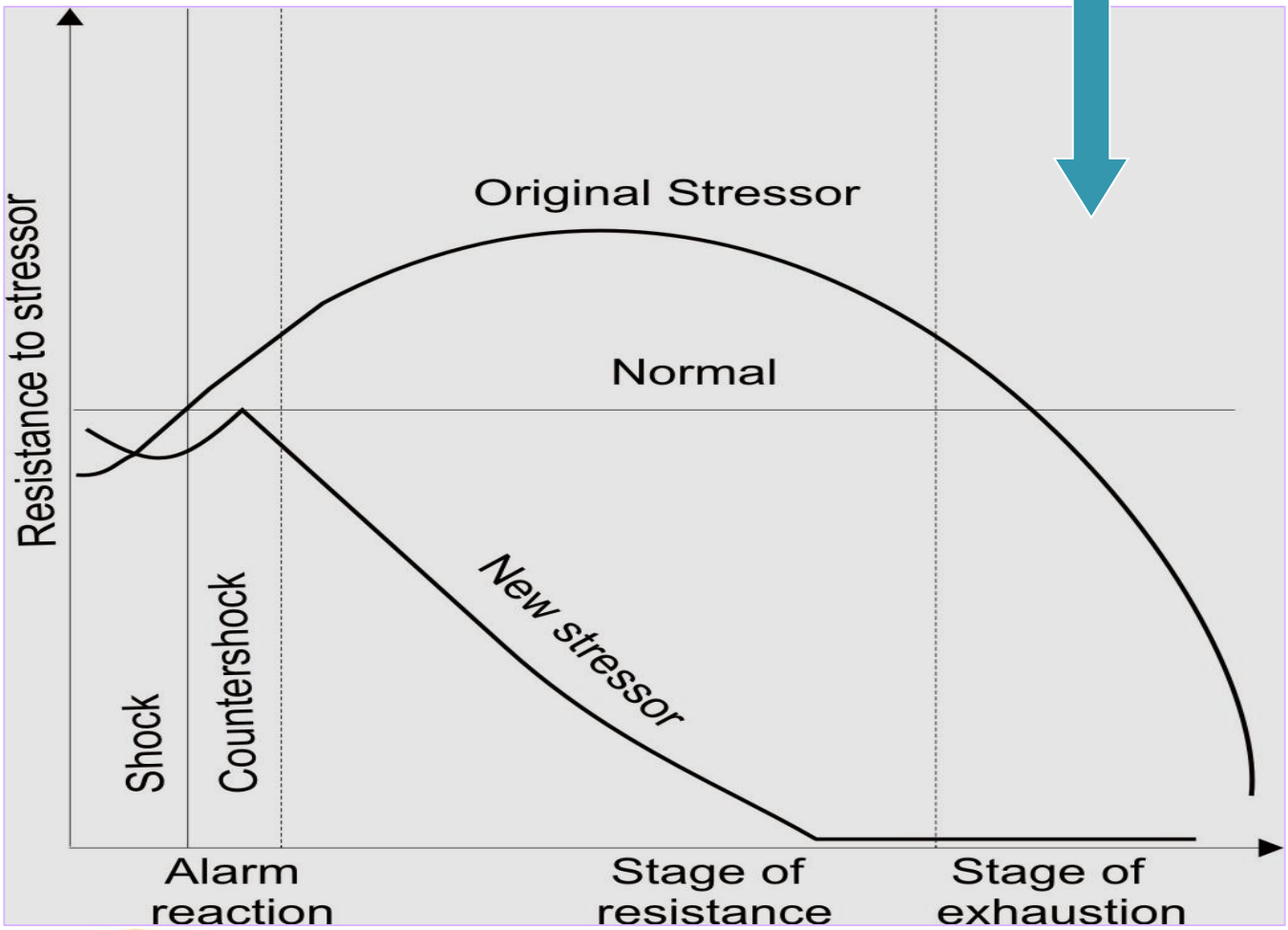


General Adaptation Syndrome
The Stage of Resistance

- If the stressor continues to exert its effect, the body initiates mechanisms which resist the effects of the continuous stressor.
- One mechanism is through the Adreno – Cortico – Tropic (ACTH) axis
- However, resistance to new stressors is impaired during this stage.

General Adaptation Syndrome

The Stage of Exhaustion



General Adaptation Syndrome
The Stage of Exhaustion

- The body's capacity to respond to both continuous and new stressors eventually becomes seriously compromised.
- The person's immunity is compromised.
- Eventually, psychosomatic disorders develop.

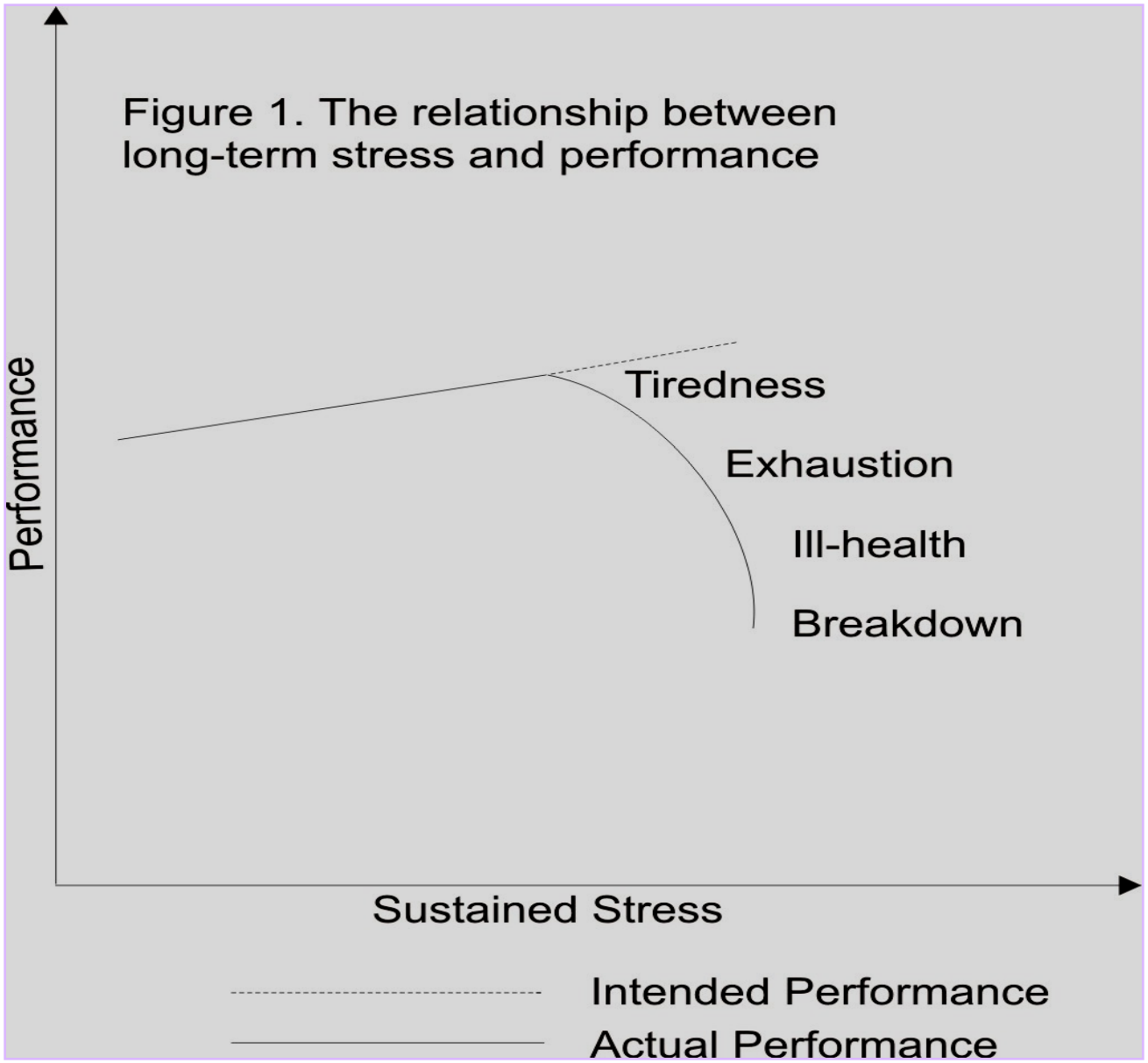
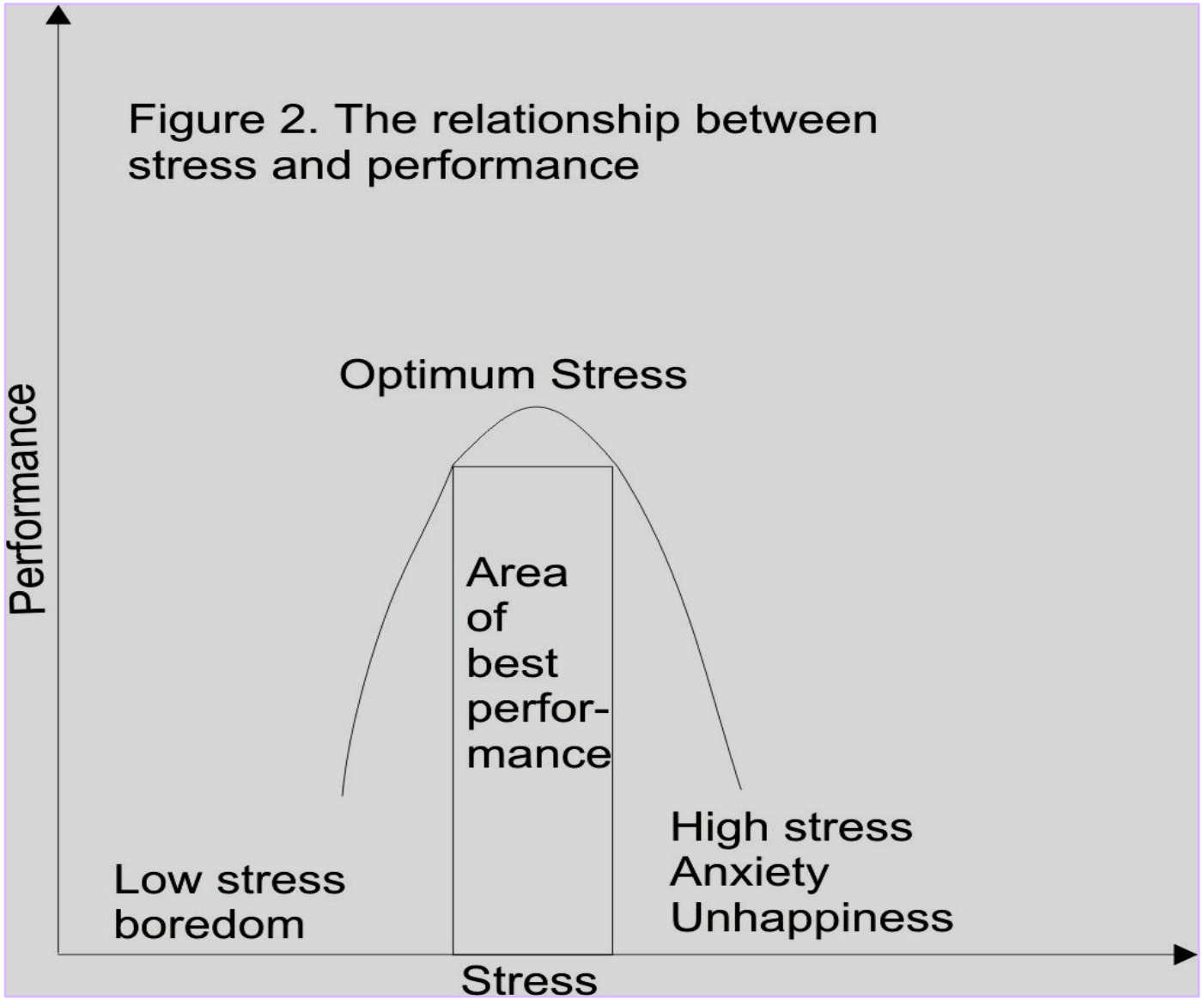
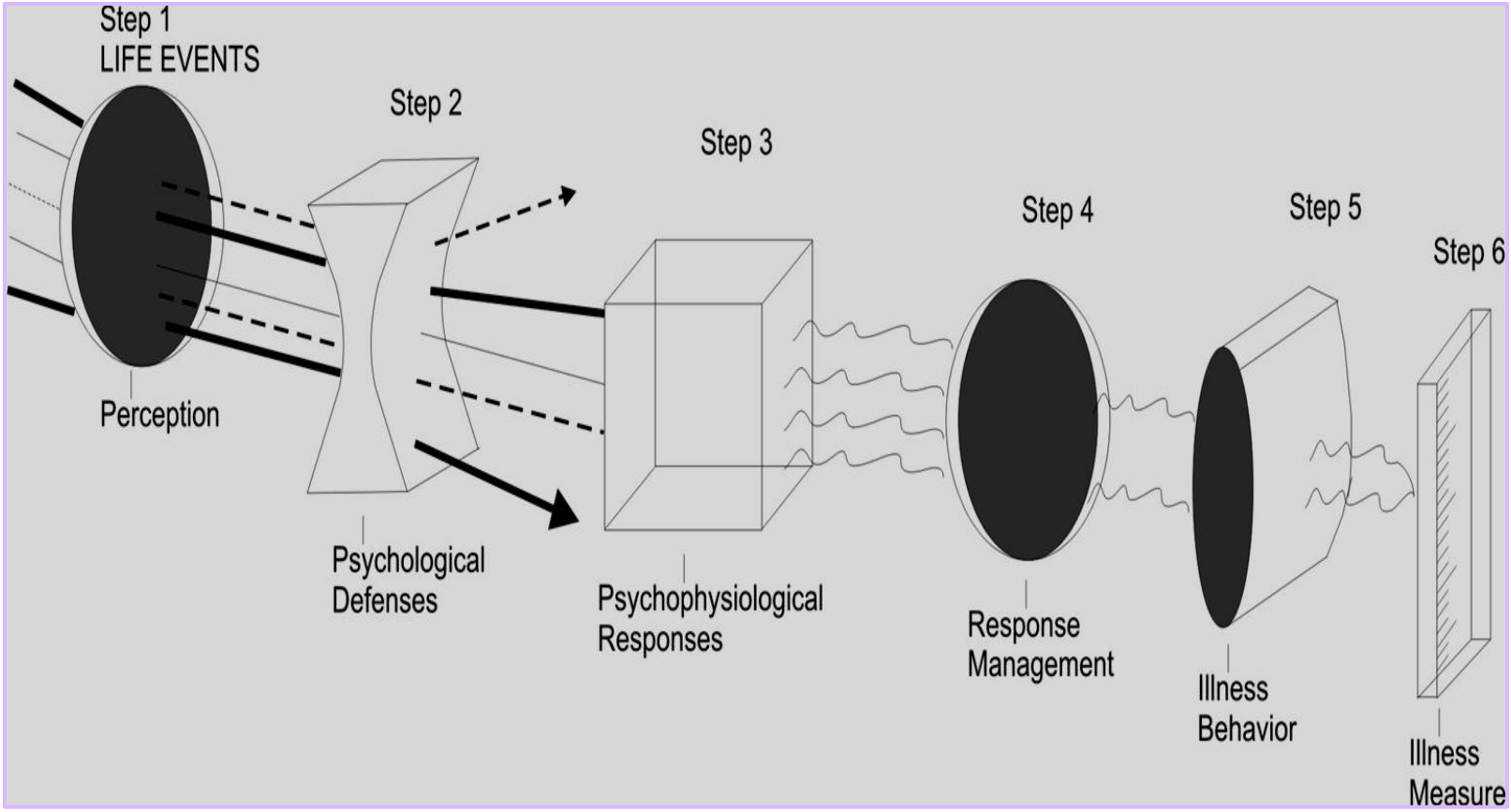


Figure 1. The relationship between long-term stress and performance
Performance
Tiredness
Exhaustion
Ill-health
Breakdown
Sustained Stress
Intended Performance
Actual Performance

Figure 2. The relationship between stress and performance



How does STRESS impact us?



Physiology of Stress

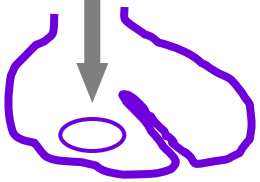
Perception of Stressor

Signals sent from various parts of the brain to activate the Hypothalamus

HYPOTHALAMUS

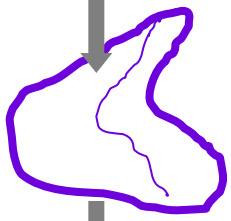
Corticotropin Releasing Factor (CRF)

ANTERIOR PITUTARY



ACTH

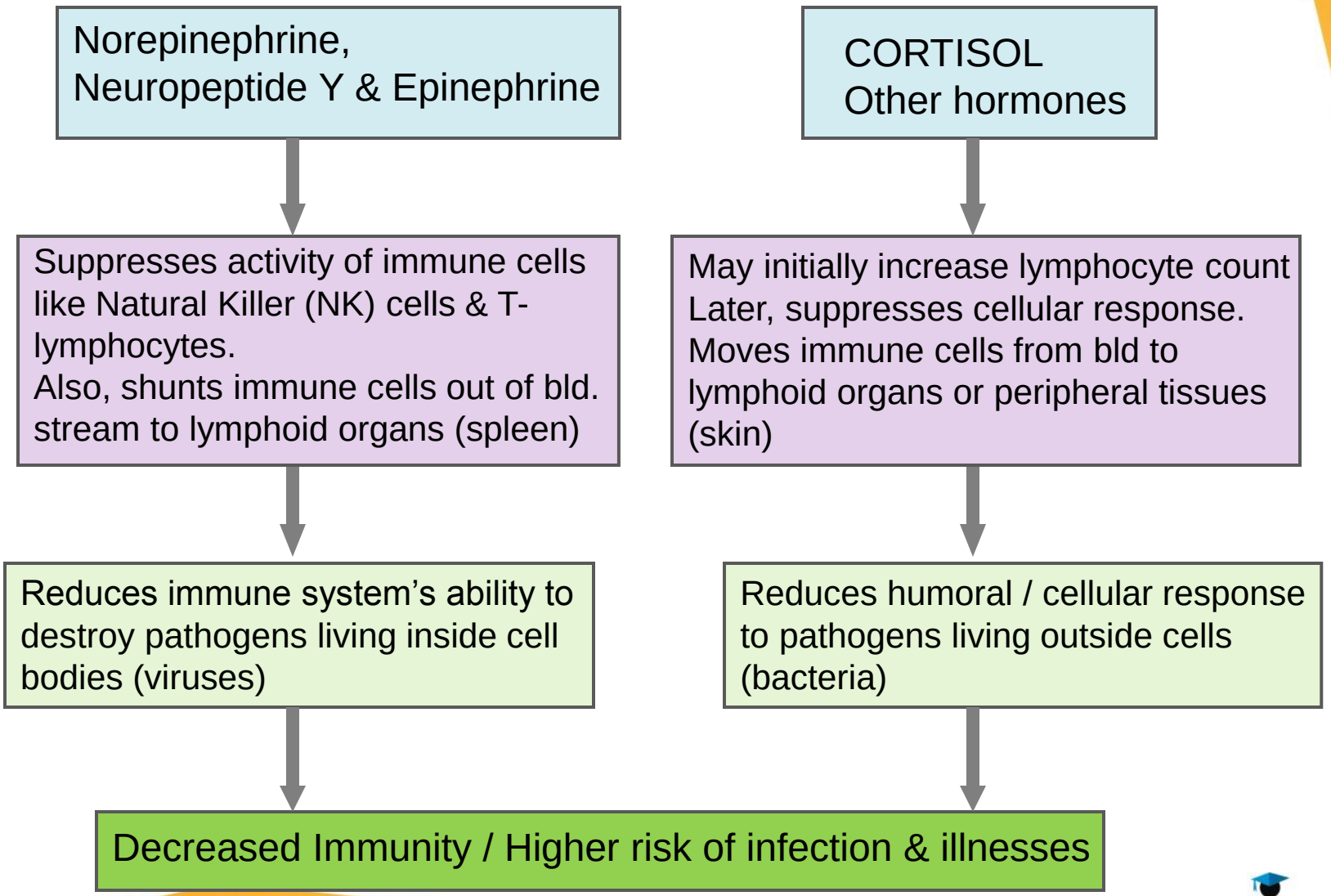
ADRENAL CORTEX



CORTISOL / other hormones

Sympathetic release of Norepinephrine, Neuropeptide Y & Epinephrine

Stress & Immunology



Stress & Immunology

- These immune cells release interleukins or ‘cytokines’
- This cytokine network aids in differentiation of immune response & in coordination of its magnitude & duration
- During stress or depression, abnormalities in cytokine expression & regulation occur. These might exacerbate the course of many chronic diseases

Cytokines & Psychoneuroimmunology

- Diseases / Disorders implicated:
- Cardiovascular disease
- Infectious disease risk
  - Viral > Bacterial
  - Influenza, Pneumonia, Tuberculosis, hepatitis C, HIV
- HIV
- Rheumatoid arthritis
- Cancer – indirect evidence

Biological changes in Stress

- There are other chemical changes in the body that facilitate the stress response and are crucial in an emergency.
- The pituitary and brain secrete substances to blunt pain; these are endorphins and enkephalins.
- The pancreas is stimulated to produce glucagon which helps raise levels of sugar glucose needed by the muscles to mobilize energy.

Biological changes in Stress

- The pituitary secretes prolactin, which suppresses reproduction.
- Other reproductive hormones - estrogen, progesterone, and testosterone, are inhibited.
  (Emergencies are obviously no time to reproduce.)
- Vasopressin, an antidiuretic, is secreted from the pituitary.
- Growth-related hormones and insulin are both inhibited as the body mobilizes its resources for immediate survival and future need are disregarded.

Biological changes in Stress

- All this arousal in an emergency becomes pathological if it is not turned off when the threat is over.
- But it is not just the threat of physical danger that must recede for the response to end.
- The brain must think and understand that it is over, or the cycle continues, becoming a hindrance to health.
- It is not that stress itself makes us sick, but its continuation creates the conditions for other ailments to make us ill.

Biological changes in Stress

The cardiovascular stress response

- Under stress, there is an increase in cardiovascular output in order to deliver oxygen and energy to exercising muscles.
- The blood moves faster and with more force.
- A vascular response of constriction of the major arteries makes the blood pressure go up.

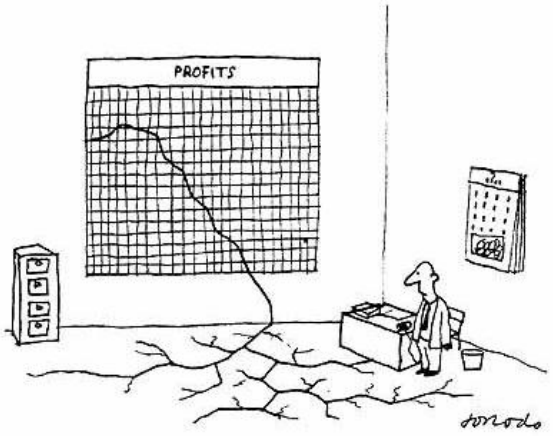
Biological changes in Stress

The cardiovascular stress response

- The blood is delivered with greater speed to the muscles, decreasing blood flow to the momentarily unessential parts of the body (digestive tract, kidneys and skin).
- Vasopressin reabsorbs water into the circulatory system to keep the blood volume up so that it can deliver glucose and oxygen to muscles.
- But a continued stress response keeps the cardiovascular system in this heightened state, wearing out the heart and arteries. What begins as a benefit becomes a detriment.

Stress Response

- Stress responses can be modulated or even caused by psychological factors, including loss of outlets for frustration and social support, a perception of things worsening and under some circumstances, a loss of control and predictability.
- However, there are many stressors that are out of our control: being born into poverty, for example, or war, or pollution.
- Yet studies confirm that it is **response to stressors** that is of crucial importance, and that each person sees and experiences these stressors through his or her own personal filter.



Recognizing Stress

Common Symptoms of Stress

- Physical
- Psychological
- Behavioral
- Emotional

Physical Symptoms of Stress

- Fatigue
- Headache
- Sleeplessness / Insomnia
- Backache
- Palpitations
- Chest pain
- Trembling / Tremulousness
- Nausea
- Cold extremities
- Flushing or sweating
- Abdominal pain
- Burning sensation in the stomach / acidity

Psychological Symptoms of Stress

- Decreased concentration
- Forgetfulness
- Indecisiveness
- Confusion
- Irritability
- Loss of interest and initiative.

Behavioral Symptoms of Stress

- Pacing about
- Restlessness / fidgety behavior.
- Nervous habits (Nail - biting / Foot - tapping)
- Outbursts of anger / Picking up fights
- Increased smoking
- Increased alcohol consumption.

Emotional Symptoms of Stress

- Anxiety
- Depression
- Nervousness
- Frustration
- Feeling irritable
- Impatience
- Crying spells
- Hopelessness
- Helplessness
- Negative thinking
- Suicidal thoughts

Learn to Heed the Signs of Stress

- Stress can seriously damage your mental and physical well-being.
- Fortunately, your body will give you signs that you are stressed. These signs are the results of your thoughts and responses to pressure.
- Heed them

Psychiatric Disorders

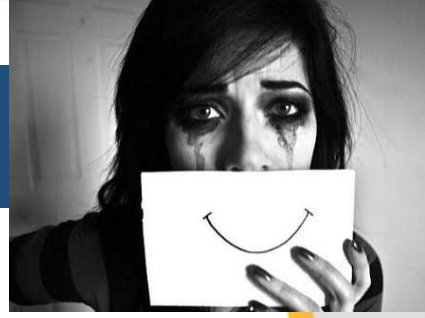
Panic Disorder

- Episodes of severe anxiety
- Acute onset, peaks in 10-15 mins, abates in 30-60 mins
- Palpitations, tachycardia, chest pain, sweating, trembling, breathlessness, chocking sensation, nausea, abdominal distress, dizziness, light-headedness, chills, heat sensations, tingling, numbness, derealization, depersonalization, fear of losing control, fear of dying or doom
- Secondary behavioural consequences, avoidant behaviour

Generalized Anxiety Disorder

- Excessive anxiety & persistent worry over 6 months of duration
- Individual find it difficult to control the worry
- Restlessness, feeling keyed up or on the edge, being easily fatigued, difficulty concentrating, mind going blank, irritability, muscle tension, sleep disturbance
- Causes significant distress & impairment in social, occupational & emotional functioning

Depression



- Sadness of mood, withdrawn behaviour, decreased interest, crying spells, decreased social interaction
- Ideas of helplessness, hopelessness, despair
- Suicidal thoughts, attempts
- Feeling worthless, poor self esteem, decreased confidence
- Anxiety, agitation, headache, body ache
- Fatigue, lethargy, psychomotor retardation
- Disturbed sleep, appetite, biological rhythm
- Irritability, decreased frustration tolerance
- Decreased concentration, forgetfulness, distractedness
- Disturbed social, occupational, academic functioning

Functional Disorders

Hypochondriasis / Somatic Symptom Disorder

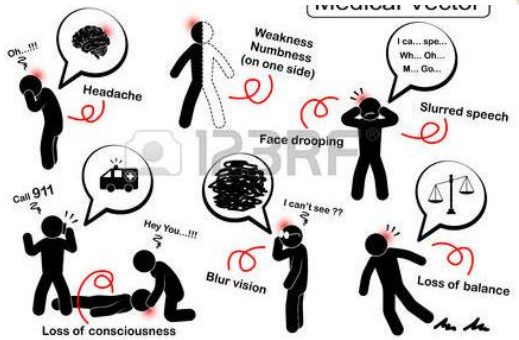
- Characterized by 6 or more months of a general and non-delusional preoccupation with fears of having, or the idea that one has, a serious disease based on the person's misinterpretation of bodily symptoms
- 4 to 6 percent of population
- ~ 20 to 30 years of age
- Persons with this disorder augment and amplify their somatic sensations / symptoms
- They have low thresholds for, and low tolerance of, physical discomfort

Illness Anxiety Disorder

- Persons who are preoccupied with being sick or with developing a disease of some kind
- It is a (?milder) variant of somatic symptom disorder (hypochondriasis)
- There are few or no somatic symptoms and persons are “primarily concerned with the idea they are ill.”
- The diagnosis may also be used for persons who do, in fact, have a medical illness but whose anxiety is out of proportion to their diagnosis and who assume the worst possible outcome imaginable

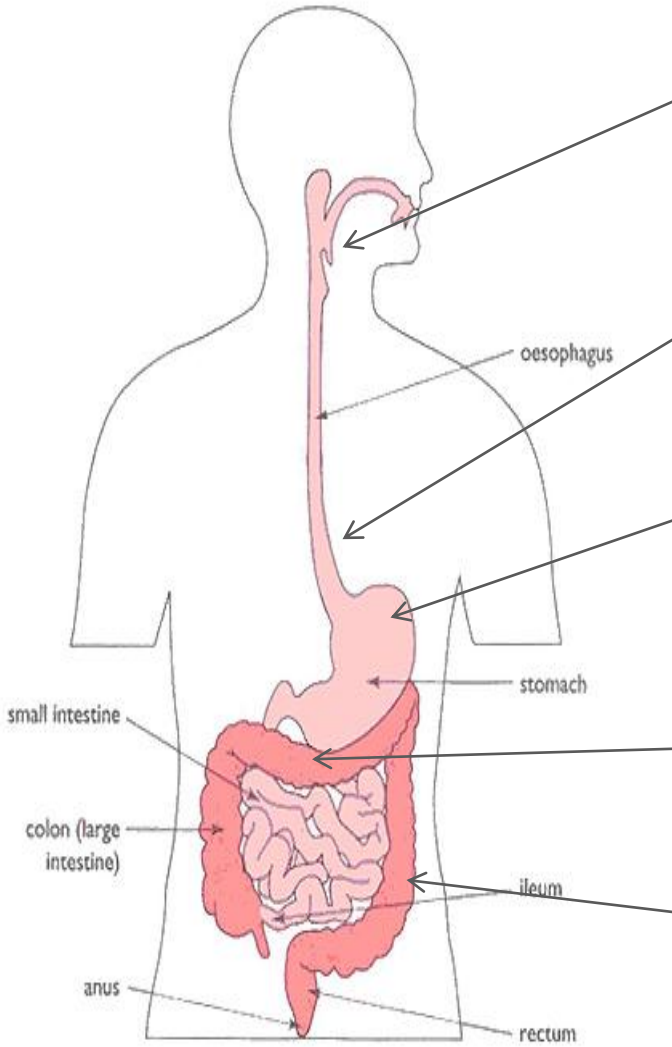
Functional Neurological Symptom Disorder (Conversion Disorder)

- An illness of symptoms or deficits that affect voluntary motor or sensory functions
- The symptoms or deficits of conversion disorder are not intentionally produced, are not caused by substance use, are not limited to pain or sexual symptoms, and the gain is primarily psychological and not social, monetary, or legal
- More likely in women than men
- Medical and, especially, neurological disorders, depressive disorders, anxiety disorders, and somatization disorders are common comorbidities



Systemic Disorders

Gastro-Intestinal Disorders



Stress increases resting tone of the upper esophageal sphincter

Stress increases contraction amplitude in the distal esophagus

Stress induces decreased antral motor activity of the stomach, potentially producing functional nausea and vomiting

Stress reduces migrating motor function of the small intestine

Stress can increase myoelectrical and motility activity of the large intestine

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Gastro-Intestinal Disorders

- Irritable Bowel Syndrome
- Peptic Ulcer Disease
- Non Ulcer Dyspepsia
- Ulcerative Colitis
- Crohn’s Disease
- Functional Heartburn
- Aerophagia
- Barbulence
- Functional diarrhoea / constipation

Cardiovascular Disorders

- Type A behaviour, hostility & aggression: two fold risk of MI & CAD
- Cardiac Arrhythmias & Sudden Cardiac Death
- Hypertension
- Vasovagal Syncope

Respiratory Disorders

- Asthma
- Hyperventilation Syndrome
- Chronic Obstructive Pulmonary Disease (COPD)

Endocrine Disorders

- Hyperthyroidism
- Hypothyroidism
- Diabetes Mellitus
- Cushing's Syndrome
- Hypercortisolism
- Hyperprolactinemia

Skin Disorders

- Atopic Dermatitis
- Psoriasis
- Psychogenic Excoriation
- Localized Pruritus
- Hyperhidrosis
- Urtricaria

Musculo-Skeletal Disorders

- Rheumatoid Arthritis
- Systemic Lupus Erythematosus
- Low back pain
- Fibromyalgia
- Headaches –
  - Migraine (vascular) & Cluster Headaches
  - Tension (Muscle Contraction) Headache

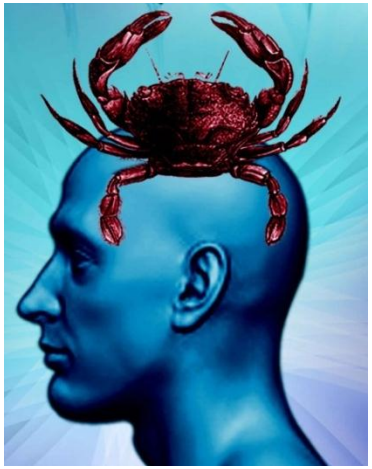
Cancer

- Various theories to explain increased association of depression & certain types of cancer
- Neuro-endocrinal changes, Immuno-suppression, Inflammatory cytokines, genetic predisposition
- Causal as well as down-stream association
- High incidence of mental illnesses in cancer patients

Cancer

Does mental illnesses cause cancer?

- Cancer <==> Mental Illness/Depression/Anxiety
- Colo-rectal, prostrate, pancreatic, oesophageal cancers, leukemia suspected
- Irrespective of whether mental illness causes cancer or not, mortality is higher in cancer patients if they have a mental illness



Summary

- The mind & the body are intimately involved in health, as well as illness
- Stress plays a very important part in our lives – for remaining healthy, as well as in developing illness
- Neuro-endocrine, immune modulation, genetic mutation, as well as various other centrally mediated mechanisms involved in ‘Psychosomatic Disorders’
- Various systemic illnesses have a bidirectional relationship with mental illnesses
- Holistic approach required in understanding, as well as management of psychosomatic disorders

Thank You

rashmin@mindspaceclinic.in

rashmin.psychiatry@gmail.com