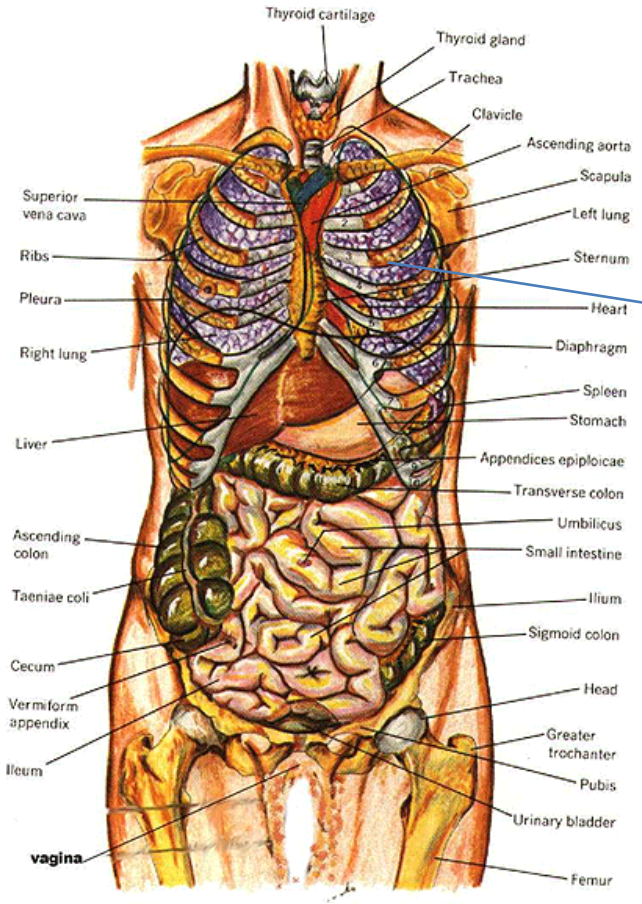
THE BODY IS WHAT MATTERS

"THE LUNGS ARE JUST DETAILS"



L.R. MATHIVHA

INTENSIVE CARE UNIT

CHRIS HANI BARAGWANATH HOSPITAL & THE UNIVERSITY OF THE WITWATERSRAND

6TH VENTILATION THROUGH THE AGES SYMPOSIUM

FEBRUARY 2011

OUTLINE

- INTRODUCTION
- THE HUMAN BODY
- INTERGRATED SYSTEM
- SODs
- CRITICAL CARE
- CONCLUSION

THE HUMAN BODY

There are many ways of looking at the human body.

We can admire it as the noblest of God's creations,

despise it as the prison of the soul,

worship it as the temple of love,

fear it as the source of temptation,

or study it as a scientific object.

Only this much is certain: Whatever we see in it will reflect our own attitudes and intentions.

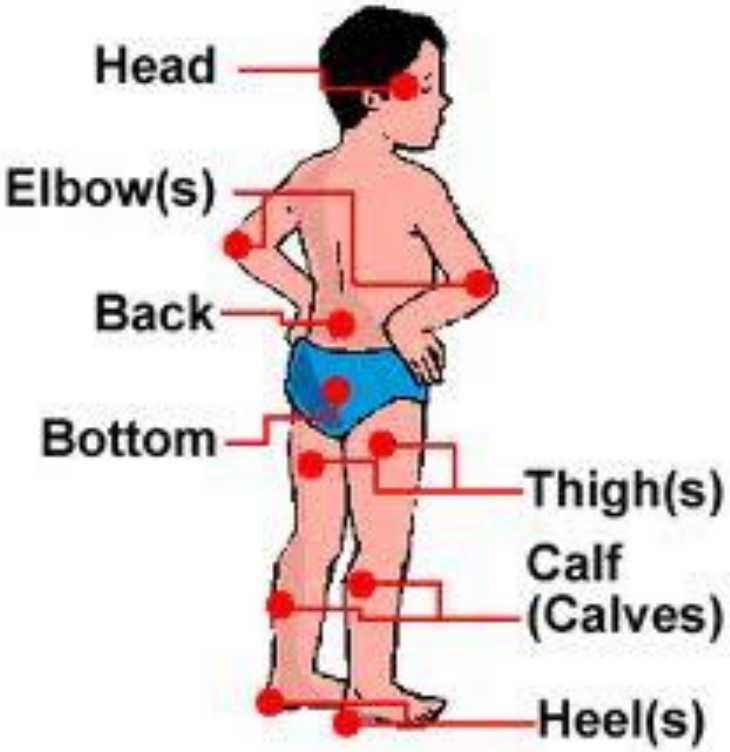
THE HUMAN BODY

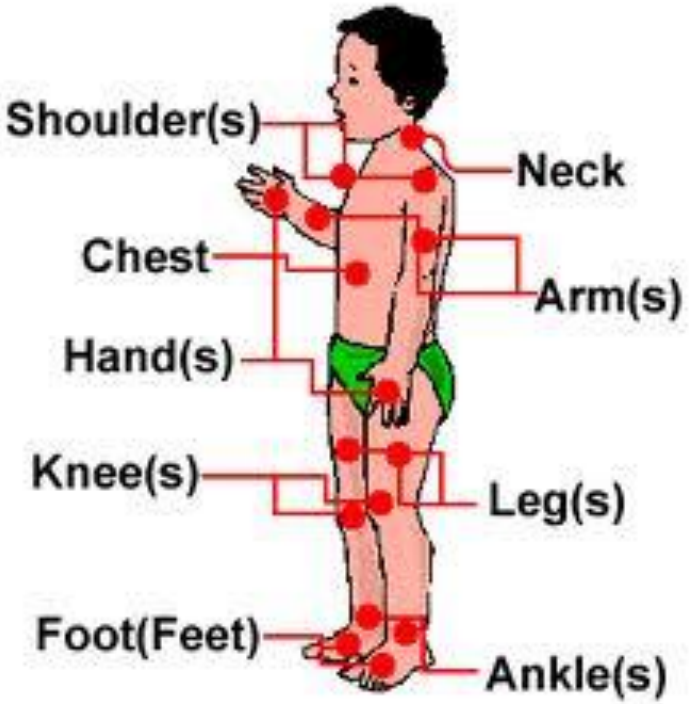
- The scientist looks at the human body "objectively," i.e., he regards it strictly as an object to be observed, weighed, and measured. He is not interested in its beauty, sinfulness, or even in its health. His only aim is to understand its functions, not to pronounce them good or bad. He does not make value judgments, but judgments of fact. In other words, the scientist tries to describe what is, not prescribe what should be. If he should find the body to be diseased, he may list the symptoms of the disease and search for its causes, but as a scientist he would make no attempt at healing.
- That is basically a moral enterprise, and it is undertaken by people who use scientific knowledge to help their fellow human beings. It is true that today the role of the scientist and that of the healer are often played by one and the same person, a physician, for example. This person would then act as healer but more importantly, try and prevent disease complications from occuring.

•INTERGRATED SYSTEM

- The human body is composed of interactive systems. Most organs in the body are necessary, a few like tonsils are not. There are specific functions for each of the organs in the systems, but they cannot operate by themselves.

ITS SIMPLE REALY!





Human Body Systems

Nervous System

Responding to changes in the internal and external environments

Nervous System

Immune System

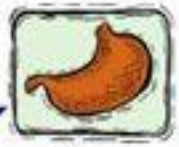
Protection from invaders

Immune System

Digestive Syst...

Breaking down big things to small things

Diffusion
Enzymes



Digestive System

Muscular/Skel...

Support and movement

Muscular/ Skeletal System

Human Body Systems

Respiratory Sy...

In with the good, out with the bad.

Double diffusion

Respiratory System

Circulatory System

Circulatory Sys...

Feeding the body and keeping things flowing to and from cells.

Reproductive System

Reproductive S...

Making pretty good copies

Excretory System

Excretory Syst...

Getting rid of waste products

Gland cell

Endocrine System

Endocrine Syst...

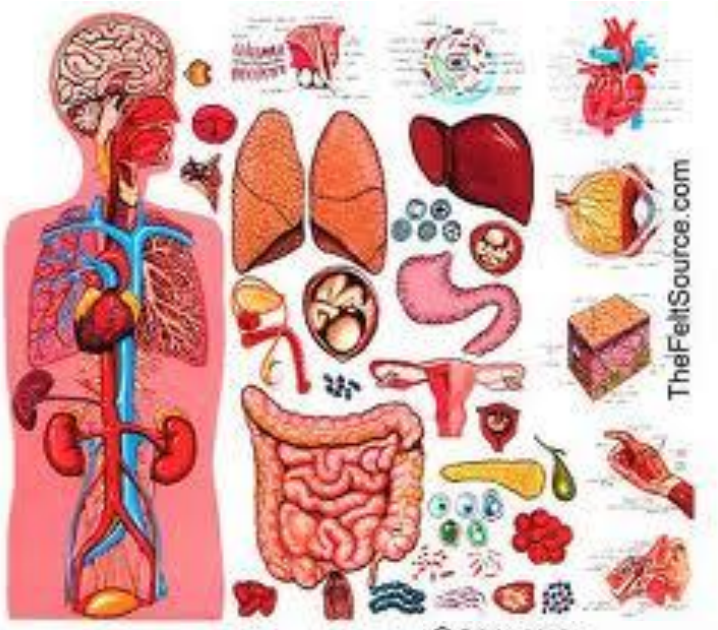
Keeping everything on track

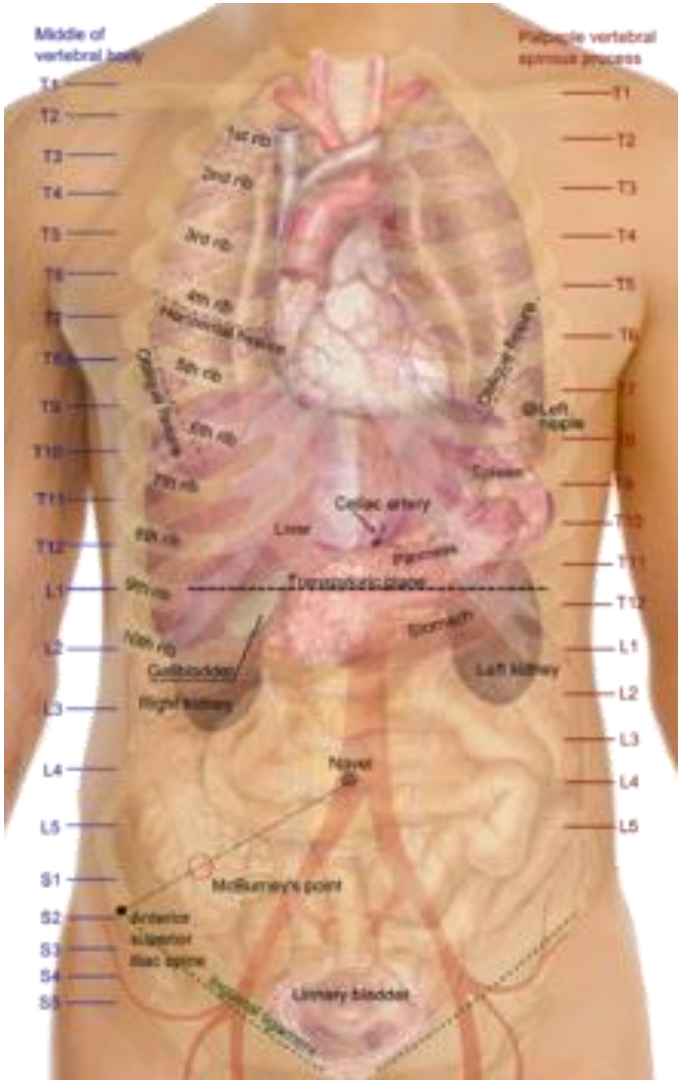
Feedback mechanisms

INTERGRATED SYSTEM

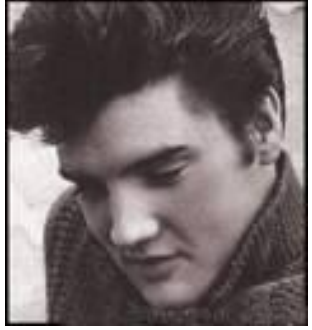
SYSTEMS	ORGANS	FUNCTIONS
respiratory	lungs, nasal passages, bronchi, pharynx, trachea, diaphragm, bronchial tubes	intake of oxygen and removal of carbon dioxide from body
nervous	spinal cord, brain, nerves, skin, eyes, ears, tongue, nose	control of body activities and the reaction to stimuli
digestive	stomach, liver, teeth, tongue, pancreas, intestine, esophagus	break down of food and absorption for use as energy
excretory	kidneys, bladder ureters, skin	controls water and salt balance
endocrine	pituitary gland, adrenal gland, thyroid gland, gonads	production of hormones and body regulation
skeletal and muscular	bones, muscles	protection and movement
circulatory	blood, blood vessels, heart, lymph	transport of nutrients, metabolic wastes, water, salts, and disease fighting cells
integumentary	skin	protection of body from injury and bacteria, maintenance of tissue moisture, holds receptors for stimuli response, body heat regulation

PACKAGING OF THE BODY






To all the beautiful
women of this world...





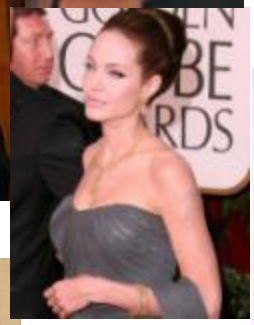




ANGO






RDS






CRITICAL ILLNESS & THE BODY

- Multiorgan dysfunction syndrome is associated with widespread endothelial and parenchymal cell injury, some of which can be explained by the following proposed mechanisms:

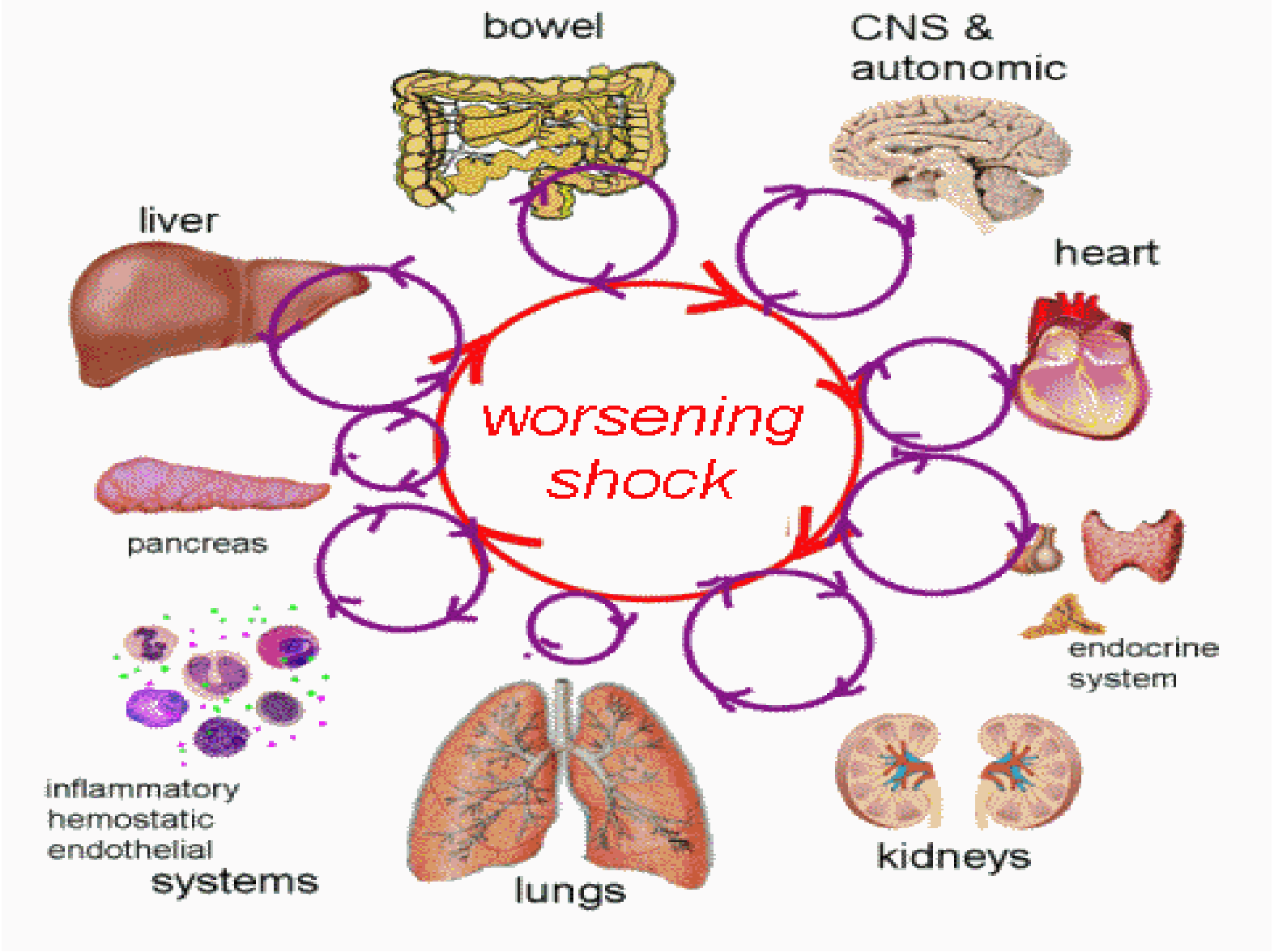
-Hypoxic hypoxia: The septic circulatory lesion disrupts tissue oxygenation, alters the metabolic regulation of tissue oxygen delivery, and contributes to organ dysfunction. Microvascular and endothelial abnormalities contribute to the septic microcirculatory defect in sepsis. The reactive oxygen sepsis, lytic enzymes, and vasoactive substances (nitric oxide, endothelial growth factors) lead to microcirculatory injury, which is compounded by the inability of the erythrocytes to navigate the septic microcirculation.

-Direct cytotoxicity: The endotoxin, TNF-alpha, and nitric oxide may cause damage to mitochondrial electron transport, leading to disordered energy metabolism. This is called cytopathic or histotoxic anoxia, an inability to utilize oxygen even when it is present.

-Apoptosis: Apoptosis (programmed cell death) is the principal mechanism by which dysfunctional cells are eliminated normally. The proinflammatory cytokines may delay apoptosis in activated macrophages and neutrophils, but other tissues, such as the gut epithelium, may undergo accelerated apoptosis. Therefore, derangement of apoptosis plays a critical role in tissue injury of sepsis.

-Immunosuppression: The interaction between proinflammatory and anti-inflammatory mediators may lead to an imbalance. An inflammatory reaction or immunodeficiency may predominate, or both may be present

VICIOUS CYCLE



WHERE THE LUNGS AT?

THE LUNGS ARE BUT ONE PART OF A HIGHLY COMPLEX SYSTEM.

IN CRITICAL ILLNESS THEY ARE OFTEN MADE THE CENTER OF ATTARCTION
BUT, THEY ALONE DO NOT CONSTITUTE THE ENTITY CALLED THE PATIENT

WHAT HAPPENS IN OUR VENTILATING THE LUNG WILL CARRY COLLATERAL DAMAGE IN OTHER ORGANS (e.g. cytokine release; hypoventilation; highly active oxygen radical species; etc)

WHAT HAPPENS IN ONE ORGAN SYSTEMS WILL AFFECT OTHER ORGAN SYSTEMS IN THE BODY: ANTICIPATE AND MANAGE COLLATERAL DAMAGE

IN MANAGING CRITICALLY ILL PATIENTS, THERE IS NO PLACE
FOR SINGLE ORGAN DOCTORS (SODs)!!!!

Human Body Systems

Nervous System

Responding to changes in the internal and external environments

Nervous System

Immune System

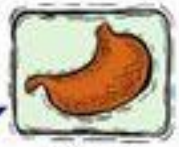
Protection from invaders

Immune System

Digestive Syst...

Breaking down big things to small things

Diffusion
Enzymes



Digestive System

Muscular/Skel...

Support and movement

Muscular/ Skeletal System

Human Body Systems

Respiratory Sy...

In with the good, out with the bad.

Double diffusion

Respiratory System

Circulatory System

Circulatory Sys...

Feeding the body and keeping things flowing to and from cells.

Reproductive System

Reproductive S...

Making pretty good copies

Excretory System

Excretory Syst...

Getting rid of waste products

Gland cell

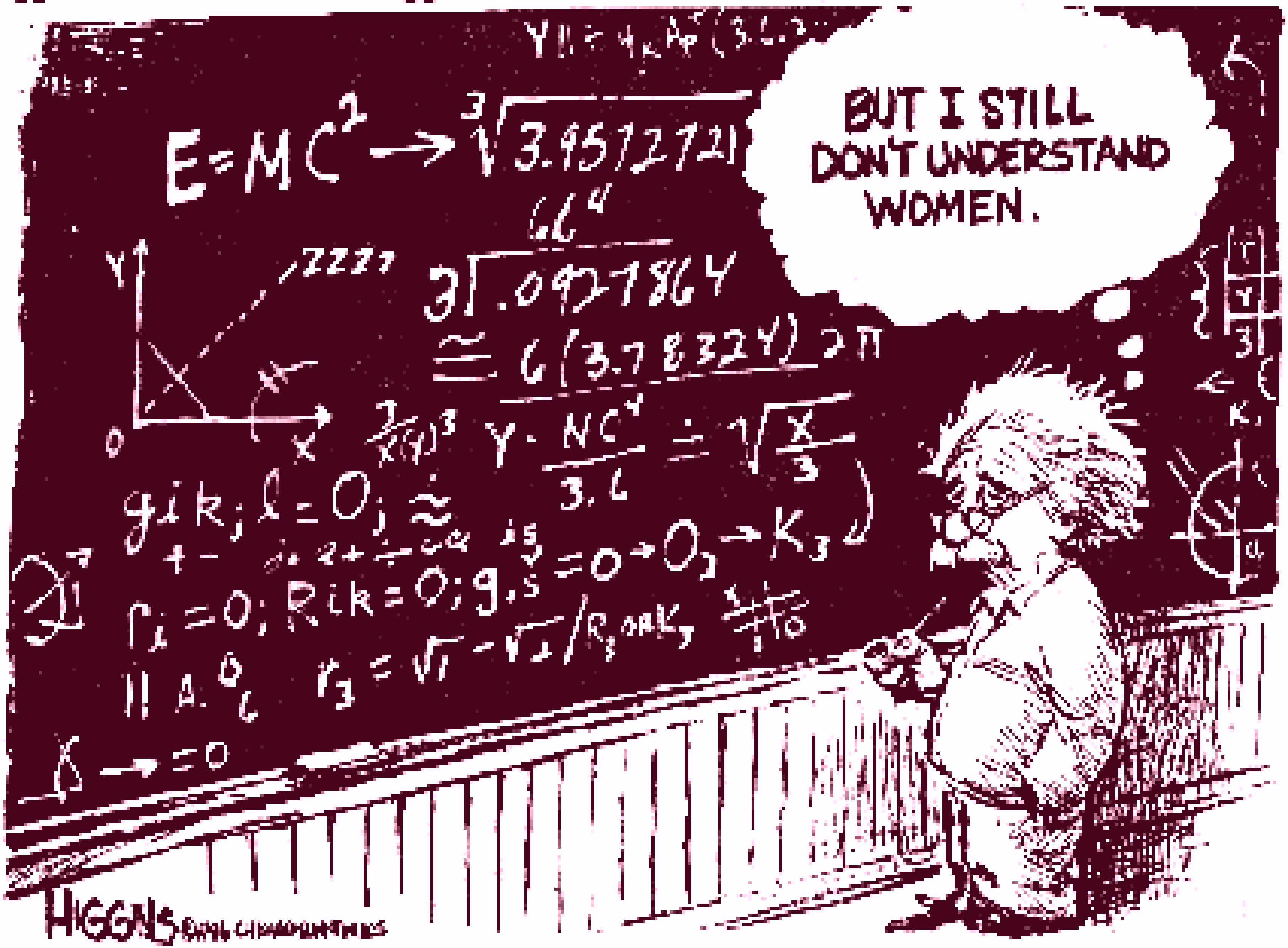
Endocrine System

Endocrine Syst...

Keeping everything on track

Feedback mechanisms

Higgins' Opinion / Jack Higgins



WOMAN

She can deal with stress and carry heavy burdens.
She smiles when she feels like screaming, and she sings when she feels like crying.
She cries when she's happy and laughs when she's afraid.
Her love is unconditional. There's only one thing wrong with her.
She forgets what she's worth!

שָׁלוֹם