

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ



CARDIOVASCULAR SYSTEM MODULE SKILL LAB /PHYSIOLOGY PRACTICAL FIRST YEAR MBBS (BATCH 50) DEMONSTRATION TO TRIPLE RESPONSE

Dr. Afsheen Batool

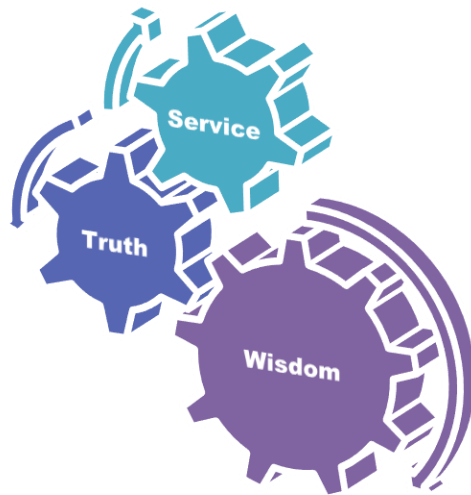
13th September, 2023



Table of Contents

Sr #	Content	Slide #
1	Motto, Vision	4
2	Professor Umar Model of Integrated Lecture	5
3	Bloom's Taxonomy(Domains of learning)	6
4	Diagrammatic Representation of Blooms Taxonomy	7
5	Learning Objectives	8
6	Horizontal Integration	11
7	Core Concept	9-16
8	Vertical Integration	18
9	Biomedical Ethics(lesson of the day)	20,21
10	Suggested Research Article	22
11	Promoting IT and research culture(Digital Library)	23
12	Brainstorming(question relevant with practical)	25,26
13	References of this practical	27

Motto

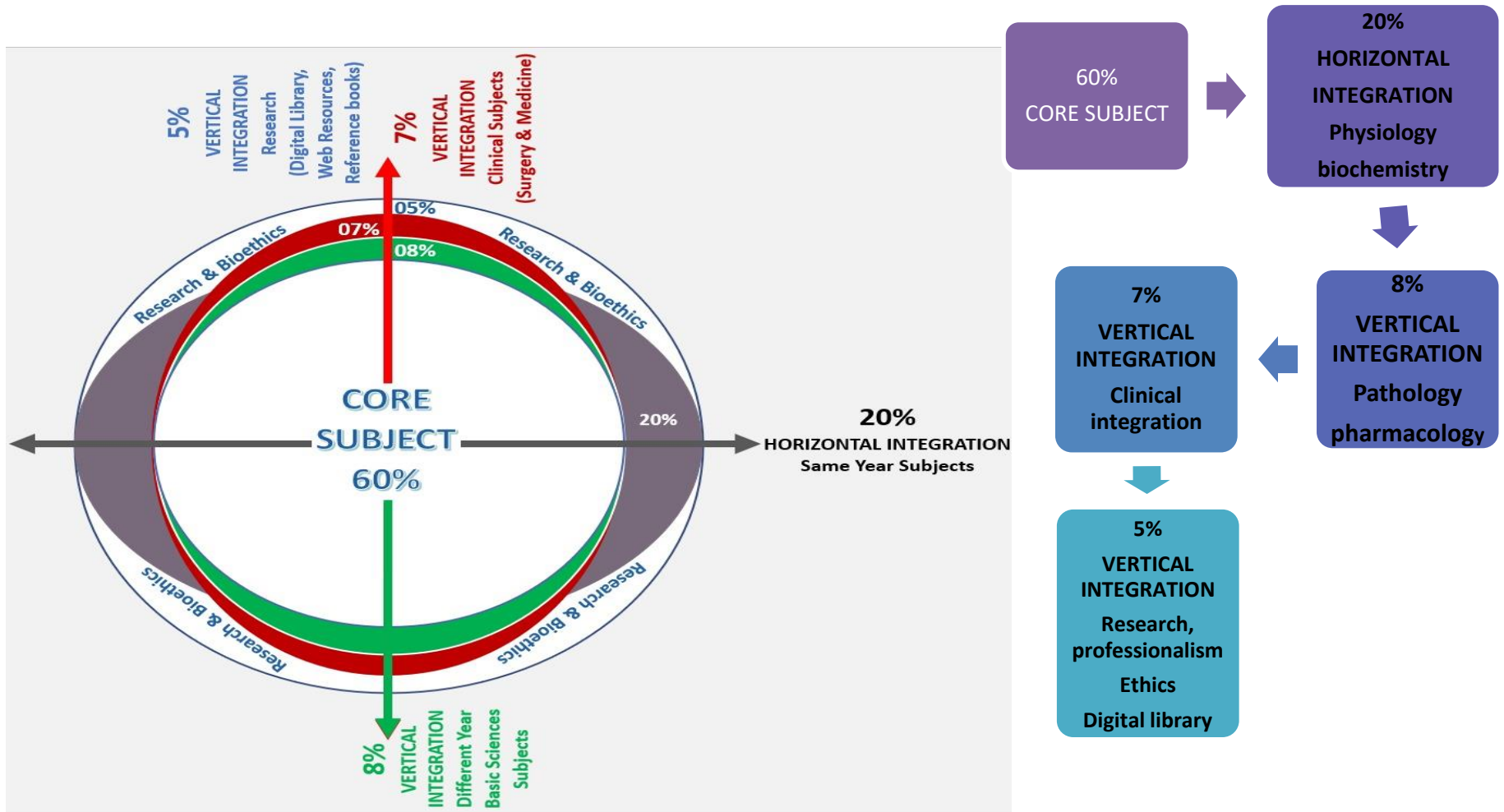


Vision; The Dream/Tomorrow

- To impart evidence based research oriented medical education
- To provide best possible patient care
- To inculcate the values of mutual respect and ethical practice of medicine



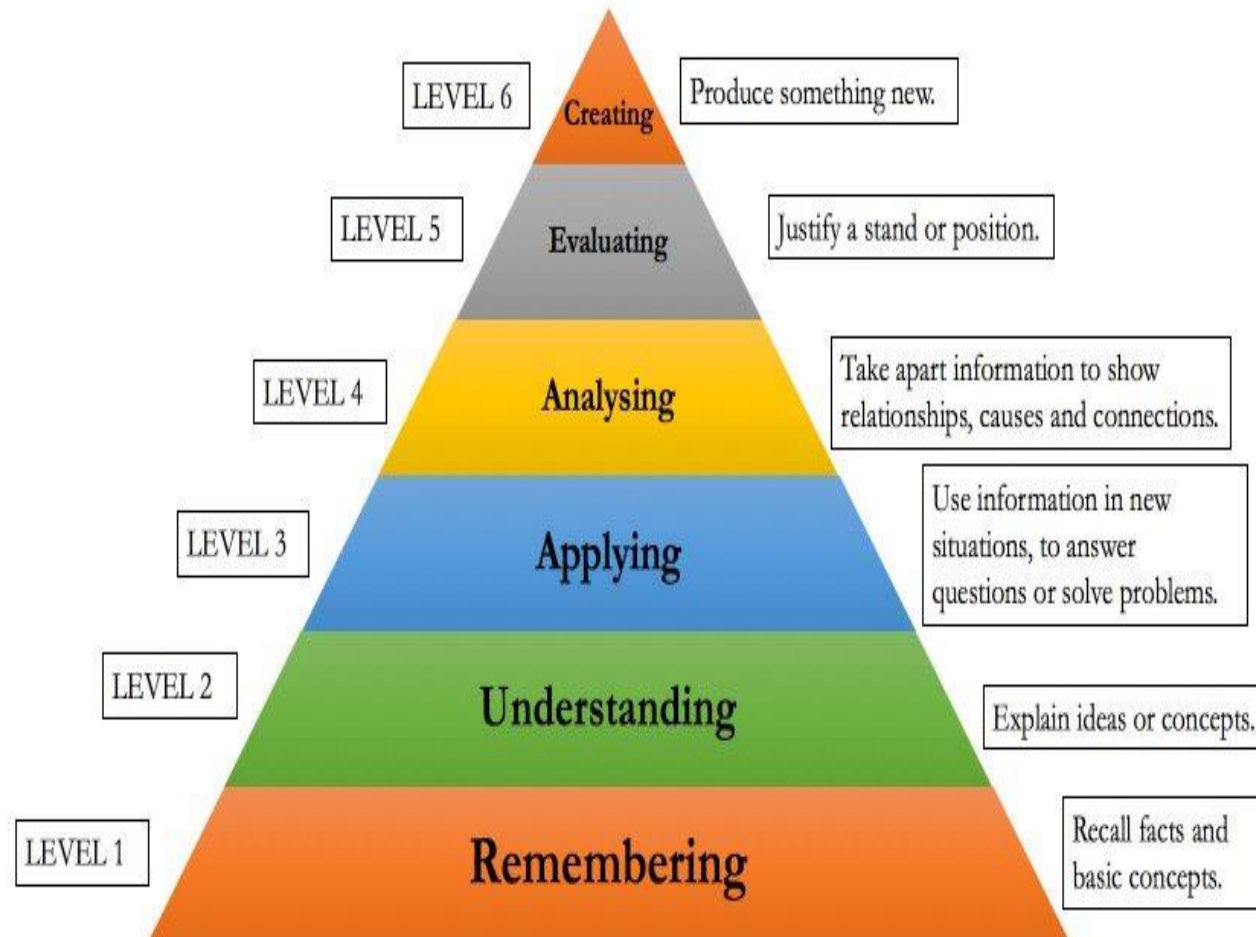
Professor Umar Model of Integrated Lecture



BLOOM'S TAXONOMY : DOMAINS OF LEARNING

Sr. #	Domain of learning	Abbreviation	Levels of the domain	Meaning
1	cognition	C	C1	Recall / Remembering
2			C2	Understanding
3			C3	Applying / Problem solving
4	Psychomotor	P	P1	Imitation / copying
5			P2	Manipulation / Follows instructions
6			P3	Precision / Can perform accurately
7	Attitude	A	A1	Receiving / Learning
8			A2	Respond / Starts responding to the learned attitude
9			A3	Valuing / starts behaving according to the learned attitude

Diagrammatic Representation of Blooms Taxonomy





LEARNING OBJECTIVES

Sr. #	Learning Objectives	Domain of Learning
1	To Understand concept of Triple Response	C2
2	To Explain Axon Reflex	C2
3	To Perform Procedure of Triple Response	C1,P3,A3

Triple Response

- **Introduction:**
- A firm strong stroke across the skin using a pencil point or a key evokes a series of responses called Triple Response.
- These responses include:
 1. Red Reaction
 2. Flare
 3. Wheel

Triple Response

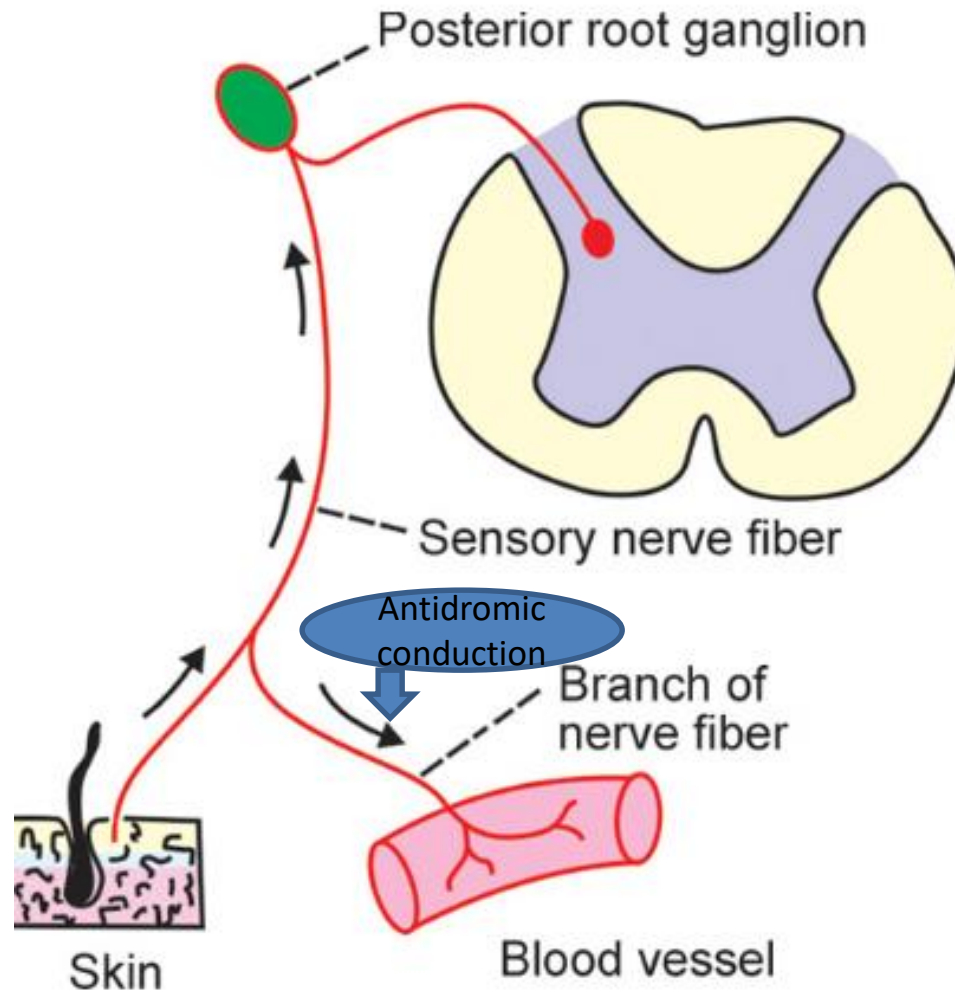
1. Red Reaction:

- It appears at the site of stroke as a red line.
- It appears because of capillary vasodilatation due to release of substance P and histamine.

2. Flare:

- It occurs due to dilatation of the arterioles and precapillary sphincter which causes irregular erythematous area which surrounds the site of the red line.
- Skin temperature overlying the area becomes raised.
- It is mediated by nerves (axon reflex) but does not involve central nervous system.

Axon Reflex



Reference:

https://www.google.com/search?sca_esv=563337353&q=Axonal

Triple Response

3. Wheel:

- If the stroke stimulus has been strong enough , a swelling or edema develops spreading from the margins of the red line within the flare area.
- This is because of increased capillary permeability.

Triple Response

- **Apparatus:**

Stick or key

Spirit, cotton swab

- **Procedure:**

- Stroke the skin lightly by smooth end of the stick or the key.
- A white line appears along the line.
- Stroke the skin firmly. It evokes series of responses as follows:

Triple Response

1. Red line outline along the stroke
2. Flare, irregular red area surrounding the red line.
3. Wheel, swelling and edema like appearance spreading from margins of the red line within the flare area.



Triple Response

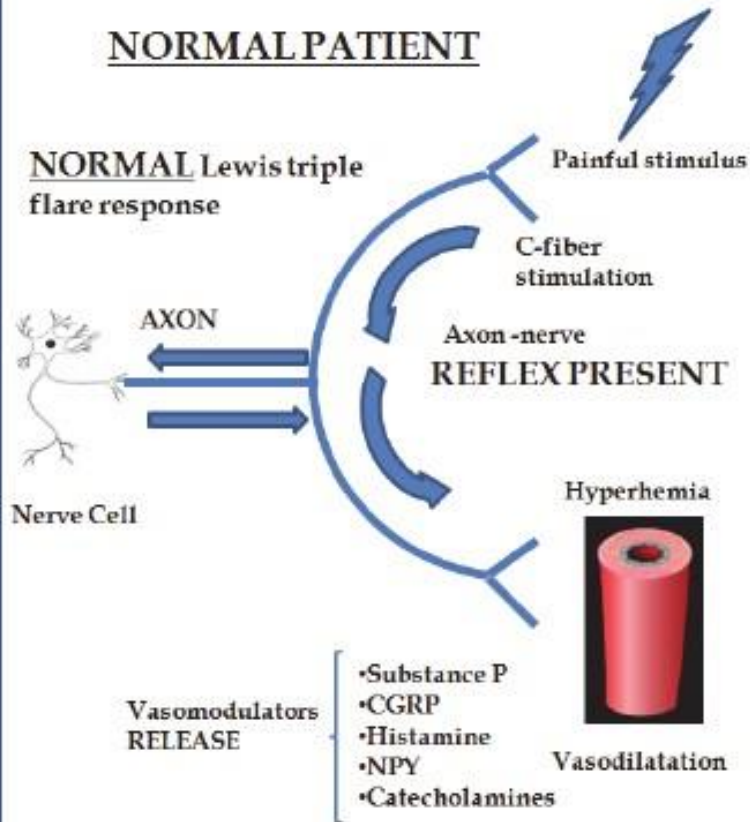
- Precautions:
 1. Clean the area over the skin with spirit swab.
 2. A stick or key should be washed properly in an antiseptic solution.



Vertical Integration

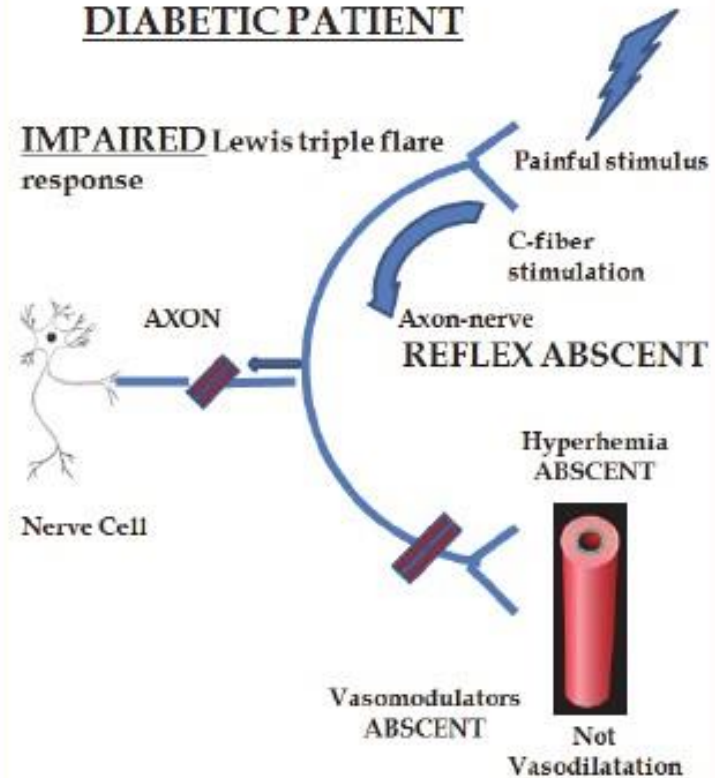
NORMAL PATIENT

NORMAL Lewis triple flare response



DIABETIC PATIENT

IMPAIRED Lewis triple flare response



Reference:

https://www.google.com/search?sca_esv=563337353&q=Diabetes



Bioethics



Lesson Of The Day

TRUTH TELLING

- **Provision of information:**

In the practice of medicine, truth telling involves the provision of information about the situation of patients.

- **Enabling patients to make informed choices:**

The provided information enables patients to make choices about health care and other aspects of their lives.



Lesson Of The Day

TRUTH TELLING

- **Relevant case:**

If you have been informed about the result of an HIV test taken by someone in your community who then asks to know his/her result. What will be your responsibility as a doctor?

- **Solution:**

You should tell the person the truth even though this might be very upsetting to that person.

Suggested Research Article

Issue 6, 2022

[Previous Article](#)[Next Article](#)From the journal:
Nanoscale

A novel UV, moisture and magnetic field triple-response smart insulating material achieving highly targeted self-healing based on nano-functionalized microcapsules†

[Potao Sun](#)^a, [Fengqi Liu](#)^a, [Wenxia Sima](#),  ^a*, [Tao Yuan](#)^a, [Ming Yang](#)^a, [Chen Liang](#)^a, [Mingke Zhao](#)^a

Abstract

During the long-term operation of solid insulation materials, strong electric fields and mechanical stress cause electrical trees and cracks that are undetectable and irreversible, leading to the failure of electronic and electrical devices. A promising means of protecting against these problems is to endow the insulating materials with some self-healing capability alongside their excellent intrinsic properties. However, this has proved extremely challenging. In this paper, we describe an ultraviolet light, moisture, and magnetic field triple-response microcapsule that enables epoxy resin materials to heal themselves against various forms of damage without affecting the intrinsic performance of the matrix. In particular, microcapsules wrapped inside functional shells containing Fe_3O_4 nanoparticles are precisely controlled by a targeted magnetic field and distributed in the vulnerable area of the insulation materials, resulting in a high healing rate at low doping concentrations. Using the *in situ* ultraviolet light emitted by the electrical trees, artificial ultraviolet light, and

Reference: <https://www.mdpi.com/2079-6374/12/7/475>

How To Access Digital Library

- **Steps to Access HEC Digital Library**

1. Go to the website of HEC National Digital Library.
2. On Home Page, click on the INSTITUTES.
3. A page will appear showing the universities from Public and Private Sector and other Institutes which have access to HEC National Digital Library HNLDL.
4. Select your desired Institute.
5. A page will appear showing the resources of the institution
6. Journals and Researches will appear
7. You can find a Journal by clicking on JOURNALS AND DATABASE and enter a keyword to search for your desired journal.

Brainstorming



Structured Essay Question related to Topic

Q.NO.1: A 55 years male known case of Diabetes Mellitus presented to Diabetic clinic with complaints of loss of pain and touch sensations in his feet .On examination triple response was also abolished . The underlying cause of this condition is ?



Answer

- Diabetic Neuropathy



REFERENCES

1. Books:

- Guyton And Hall textbook of Medical Physiology 14th Edition
- Ganong's Review of Medical Physiology 25th Edition
- Sherwood, 9th edition.
- Silverthorn Physiology, 6th edition
- Vander's Human Physiology, 14th edition
- Google images.

2. Medical Journal articles:

A novel UV, moisture and magnetic field **triple-response** smart insulating material achieving highly targeted self-healing based on nano-functionalized microcapsules

Reference: <https://www.mdpi.com/2079-6374/12/7/475>

3. Video link /youtube:

<https://youtu.be/JtBtk00EiVM?si=y-2DAPW49eQwqU6N>

*Thank
you*