



# DESCRIPTION OF VIDEO CLIPS & PRO FORMA BASED TASKS FOR ANALYSIS OF VISUAL MEMORY: A SCIENTIFIC METHOD FOR ASSESSMENT OF TEMPERAMENT

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## ABSTRACT

**Background:** *Mizāj-e-Mu‘tadil Shakhsi bi’l-qiyās ila’l-khārij* (Equable temperament of an individual as a whole) is the best temperament for the normal functioning of the body. Ancient physicians described the parameters for the determination of temperament in various manuscripts. There are some philosophical view regarding *Determinants of Temperament* that need scientific interpretation and validation. Visual memory, one of the types of external as well internal perceptive powers. Through assessment of visual memory, we can assess Mizaj of individual.

**Aims and Objectives:** To developed scientific methods for assessing of Temperament through Visual memory assessment.

**Material Methods:** Visual memory tests are based on *Benton Visual Retention Test* (BVRT). BVRT is an assessment of visual perception & visual memory abilities. For making video, researcher selected different images and merges them according to time of display. There are two video, times period of first video clip is 30 seconds and time of other video is 1 minute 30 seconds.

**Conclusions:** Through Developing a new authentic tests for assessing visual as well as internal perception of individuals with developing a new technique for quantification of range of perception we have been developed a scientific and authentic parameter for assessing temperament of different individuals.

**Index Terms:** *Unani Medicine, Mizāj-e-Mu‘tadil Shakhsi bi’l-qiyās ila’l-khārij, Visual Memory, Photographic Memory.*

**Introduction:** Mizāj occupies an important place in Unani medicine and forms the basis of physiology, pathology, diagnosis and treatment. Each and every atom, molecules, organelles, cell, tissue, organ, as a whole is furnished with a temperament upon which their properties, functions and life depend.<sup>1</sup> *Mizāj-e-Mu'tadil Shakhshi bi'l-qiyās ila'l-khārij* (*Equable temperament of an individual as a whole*) is the best temperament for the normal functioning of the body.<sup>2</sup> So the definition of the temperament which applies on the human body has been marked as *Health or Equable/Normal Temperament (Mizāj Mu'tadil Ṭibbi)*, which is given below,

*“Wherein the contrary qualities and quantities of participating matters in the body are perfect in accordance to the properties as well as functional need of that compound, then it is equable temperament”.*<sup>3</sup>

There are some philosophical view regarding Health or Mizāj Mu'tadil Ṭibbi that need scientific interpretation and validation. In this regards different attempts have been made in the world. Ancient physicians described the parameters for the determination of temperament in various manuscripts. These parameters are related to the morphological, physiological and psychological conditions of the human beings. These parameters are known as the *“Determinants of Temperament”*.<sup>4</sup>

*Assessment of Visual and Auditory Memories in Different Temperaments is the topic of my thesis.* It is essential to find a more scientific determinant of temperament through visual & auditory memories assessment which is the part of Af'āl-ul-A'dā.<sup>4,5,6</sup> The present paper has been described a scientific methods for assessment four different temperament categories, Bilious (Ṣafrāvi), Damvi (Sanguineous), Balghami (Phlegmatic) and Sawdāwi (Melancholic). Here we described material methods (self-made Video clip and proforma) with details.

## Material & Methods:

**Sampling:** For random sampling, one hundred forty healthy volunteers (male & female) were enrolled, in which only one hundred twenty (120) could fulfilled the inclusion criteria.

There are four Performa's which were used in the study:

Pro Forma for Health Assessment

Consent Form

Mizāj Assessment Pro forma<sup>5</sup>

Pro forma for assessing Visual Memory

**Place of Study:** This study has been carried out at the *Advance Instrumentation Lab*, Department of Kulliyat, Ajmal Khan Tibbiya College, Aligarh Muslim University, Aligarh. U.P.

## Study Equipment's:

1. Panasonic HD Plasma Display screen
2. Video clips

**Panasonic HD Plasma Display Screen:** It is a new advanced dual picture mode, with model name, *SKU # AA31451 | Model # TH-50PD12*. In addition to the conventional dual picture mode this new mode overlays a video image onto a full-screen PC image. It also delivers elegance and superb image quality even if it is in a boardroom. Screen Size of screen is 42 inch, contrast Ratio 30,000:1, display resolution is 1920 x 1080 pixels & Weight is 64 lb.

**Video Clip:** For assessment of visual memory, video based procedure was used. This is because the experience of visual memory is also referred to as the mind's eye through which we can retrieve from our memory a mental images of original objects, place, animal and people.<sup>7</sup> Visual memory tests are based on *Benton Visual Retention Test* (BVRT). BVRT is an assessment of visual perception & visual memory abilities. During testing, participants are presented with 10 cards for 10 seconds with unique designs on each. After the time has passed, participants are asked to immediately reproduce the designs from each card using their visual memory. In the second stage, participants asked to copy each of the 10 card designs.<sup>8-9</sup> Here we replace these cards with images & made a visual clips with different images having different characteristics. For making video, researcher selected different images and merges them according to time of display. There are two video, times period of first video clip is 30 seconds and time of other video was 1 minute 30 seconds.

**1. Details of first Video Clip:** Some instruction are given in the beginning of video like, "How, what, why" just for creating attention of the volunteers. Instructions given in such a manner like, "You will be shown few images one by one, each images would stay on screen for only about a second, you need to memorize as much detail about those images as you can, you will then be asked questions related to those images. There are ten images in video, each images was stay on screen for only about one second. Volunteers had to memorize detail as much as possible about those images as shown in Figure-01 and questions related to video clip shown in Table 01.

## **2. Details of Second Video for assessing Photographic Memory:**

For assessing photographic memory another self-design video was used. Scholar Annette Kujawski Taylor stated, "In photographic or eidetic memory, a person has an almost faithful mental image or photograph of an event in their memory. However, eidetic memory is not limited to visual aspects of memory and includes auditory memories as well as various sensory aspects across a range of stimuli associated with a visual image."<sup>10</sup> Eidetikers", as those who possess this ability are called, report a vivid after image that lingers in the visual field with their eyes appearing to scan across the image as it is described.<sup>11</sup> Lilienfeld stated, "People with eidetic memory can supposedly hold a visual image in their mind with such clarity that they can describe it perfectly or almost perfectly, just as we can describe the details of a painting immediately in front of us with near perfect accuracy."<sup>12</sup> There were following images in second video clip as shown in Figure 02 and related questions as shown in Table- 02.

## **Methods of Study:**

After assessment and categorization of Mizāj into four groups i.e. Biliious, Sanguineous, Phlegmatic, Melancholic, volunteers randomly called for memory tests. It was done with the help of authentic video, audio & pro-forma based tasks procedures. The assessment required to watch video, carefully and completed it by filling the pro-forma according to their own perceptive powers. All the assessment was carried out in the *Advance Instrumentation Lab* with regulated brightness of display screen and fixed set volume of speaker & lab was free from any unnecessary noise. First of all, consent of every individual was taken and all were explained about the complete information of procedure. Then researcher, asked the volunteer to sit on the chair in static position and be attentive. The distance between screen display and chairs of volunteer was approx. 3-4 meters. After completely

viewing the video clip, the questionnaire pro-forma for visual memory was handed over to them in which questions related to the clip were mentioned, time limit for filling the pro-forma was 5 minute shown in figure-03. After statistical analysis & applying unpaired “t” test, scoring of memory of every individual crosschecked with their characteristic features of Mizāj.

### **Scoring of Memory:**

There were 17 questions of visual memory, 18 questions related to auditory memory and 18 questions of combined memory. Each questions carried marks according to level of question. Easy questions carried 0.5 marks, average question carried 1 marks and hard questions carried 2 marks. Total marks of visual memory test were 20. In the same way auditory and combined memory carried 20-20 marks. The sum of all the three memory score was 60 shown in Table -03 and Table-04. The volunteers, as per their visual, auditory and combined memory scores were categorized into Excellent Memory, Above Average Memory, & Below Average Memory as shown in Table 05.

So, raw data obtained, was arranged and statistically analysed. The mean and standard deviation of scoring visual, auditory & combined memories were calculated and unpaired “t” test was applied to obtain the significance of results between two different temperaments of all four temperaments.

### **Reliability & Validity of Visual & Auditory Memory Tests:**

Visual memory test is based on BVRT. So the reliability of Benton Test manual, is 0.85 and alternate form reliabilities range from 0.79 to 0.84. Correlation between immediate and delayed memory recall ranges from 0.40 to 0.83, depending on the combinations of forms used. Included with the manual are standardized results for children, adolescents, and adults, though each administration method have their own standardization data.<sup>8</sup>

The Benton Test has been criticized by test's requirement of the examinee's IQ or estimated IQ, which can be difficult to obtain if the examinee is in a poor condition. In addition, data from the studies that look at the viability of retesting a volunteer have shown conflicting results; some studies show no difference in scores after time has passed between two tests, while other studies show a difference.<sup>9</sup> Although these reports, the Benton Test has many advantages over other tests of visual memory. These include: a more explicit scoring system than other tests, parallel-forms reliability due to the presence of multiple form sets, and short administration time. Due to this, the BVRT is still widely used even today for a large number of clinical conditions.<sup>12</sup>

### **CONCLUSION:**

With the knowledge of Unani as well as modern concepts of visual memory, we have been developed a scientific authentic tests for the assessment of visual memory in healthy individuals. Through developing a new technique we also quantified range of Quwat Mudrika (Perceptive powers) in each individual of all temperament as Bilious, Phlegmatic, Sanguine and melancholic. These tests are very beneficial for assessing visual as well as internal perception of individuals. These tests can be used in memory enhancement as brain exercises and also memory could be assess as a general routine check-up.

**Advantage of equipment in Health care:**

- a. This equipment's could be used for the assessment of Mizāj.
- b. This equipment could be used for the diagnosis of any kind of normal declination of memory in different age.
- c. This equipment could be also use as an indicator for diagnosis of memory related diseases like, dementia, Alzheimer disease etc. in any age.

**table: 01 list of questions of first video for assessment of visual memory**

S. No	Questions
	One of the pictures had seagulls in it, how many seagulls were there?
	On which side roaster (head) of cock looking?
	Which flower did you see?
	What were the colours of capsicum?
	What date was written on the shoes?
	What was the cat doing?
	Which musical instrument did you see?
	What was the colour of the plate?
	Number of apples you saw?
	How many pictures were there?

**table-03, list of questions of second video for assessment of photographic memory**

S. No	Questions
	Of what colour was the folder on the desk?
	What colour was the boy's head band?
	What was the colour of blanket on the bed?
	How many chairs were there in the room?
	What colour was her eyes?
	How many ships were there?
	What colour was the fabric across her hair?
VIII.	What colour was the first ring?

table-03 visual memory scoring:

Q. No	Questions	Scores
1	One of the pictures had seagulls in it, how many seagulls were there?	01
2	On which side head of the cock was turned?	01
3	Which flower did you see?	0.5
4	What were the colour of capsicum?	0.5
5	What was the date written on the shoes?	02
6	What was the cat doing?	01
7	Which musical instrument did you see?	0.5
8	What was the colour of plate?	0.5
9	No of apples you saw?	01
10	How many pictures were there?	02
	Total	10

table-04 scoring of visual photographic memory

Q. No	Questions	Score
1	What colour was the folder on the desk?	0.5
2	What colour was the boy's head band?	0.5
3	What was the colour of blanket on the bed?	01
4	Colour of basket of vada-pao?	01
5	What colour was her eyes?	02
6	Colour of cold-rink bottle..?	02
7	Colour of cap of tea maker?	0.5
	Total	10

Numbers of Video	Memory	Score
1.	Visual	10
2.	Photographic	10
	Total	20

table: 05. categorization of levels of memory according to scores of individuals

Level of Memory (Visual)	Scoring / 20
Excellent	16-20
Above Average	10- 15
Below Average	0-9
Total	20



1. One cock- roaster of cock towards left side    2. Blue colour bike with modal name K1300



3. Four seagulls, on the surface of sea    4. Two capsicums of Red & Yellow colour.

5. One violin

6. Two omelette slice, with white plate.







7. Image of one sunflower

8. A cat with closing eye and licking paw

9. A white shoes, date was written on shoes

10. Images of three apples

figure: 12 description of images of first video for assessment of visual memory

1. Image of an office room in which a lady is sitting in the chair & busy in her office work. There are many objects on the tables like, desktop PC, white colour diary, Blue folder



file, blue dustbin, lady also carried blue dress.

2 .In second image, there are six children wearing different colour of cloths, colour of dresses were, blue, yellow, sky blue and black. Two child wore blue and multi-colour hair



bands.



One g girl with sky blue hairband.



Scene one congested room.

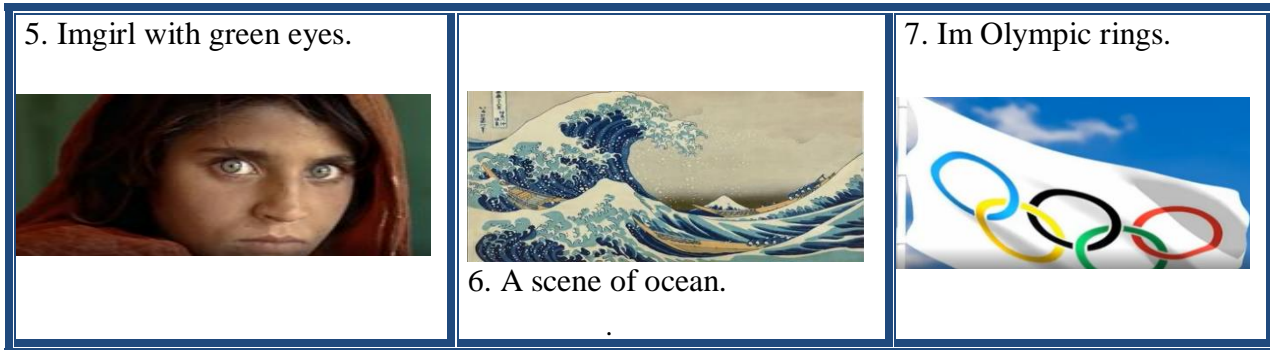
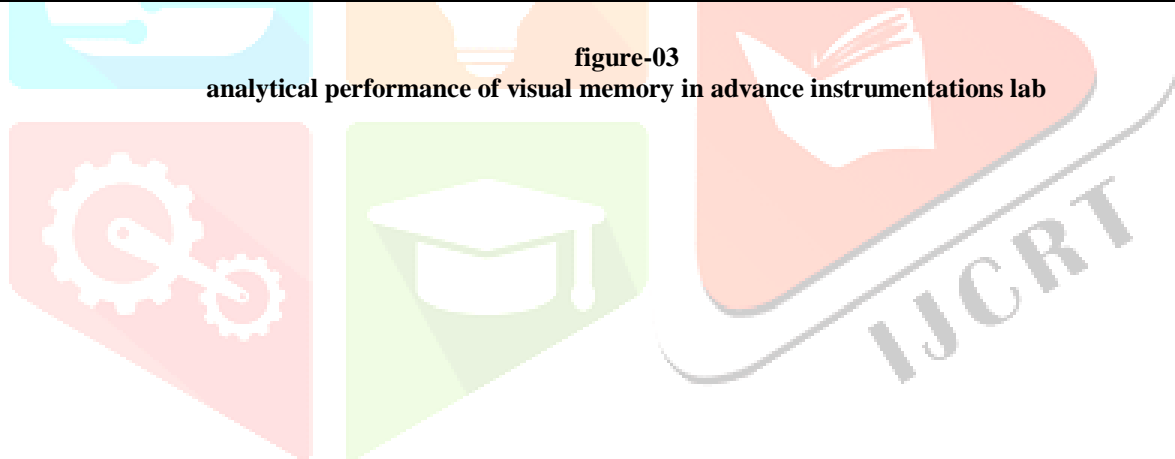


figure: 02 description of images of second video for assessment of photographic memory



figure-03  
analytical performance of visual memory in advance instrumentations lab



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