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cap 3. f. Pupil Iris Ratio, Facial Color and Temperature

cap Background: As noted the autonomic nervous system (ANS) appears to play a much more prominent role in motion sickness ~~MS~~ on earth than in ~~space~~ ^{space} ~~MS~~. To document extent and magnitude of ^{unusual} ANS activity a number of studies have been attempted including HR, BP, ~~Temp~~ ^{temperature}, ~~facial~~ ^{le} ~~color~~, and changes in pupil size. The latter may be rather easily obtained by a photographic comparison. ^{this} procedure which will be described. Two ~~various~~ ^{other} variables which also affect pupil size are eye focal distance and ambient light.

cap and ~~their~~ ^{and} ~~control~~ ^{flash} determination will be described.

Procedures: Pupil Iris ratio

Using the onboard 35 mm. camera, a close mid deck

picture of the eyes is taken in a standard location to avoid

light variation. insofar as possible insure measure

* Since flash duration is only 250 μ sec. ^{too much too fast for} the pupil response during the photo.

light level the on ^{mid-}board spot, photometer is ~~set~~
shutter ~~speeds~~ and film speed values are ~~set~~ set to

standard numbers, a ~~standard~~ reflectance card is
against the face

held, at eye level and the photometer actuated.

(mistake) The resulting F value, ^{from which the ambient light may now be calculated} is displayed. The light meter
display

is photographed ^{with} the eyes. ~~Two~~ additional items
are ~~the~~ needed, for a standard against ^{eye} To avoid

pupil variations ^{with} focal distance of the subject is

The iris is used as
instructed to gaze ^{without} discrete focus, ^{the} standard to

for comparison of pupil size. Although pupil size

can be easily calculated, in a given individual

the ratio between pupil ^{transverse} ^{and} iris, is an adequate

indication. This is obtained by measuring

these diameters on a 10^{-4} in. resolution resolution

comparator in the photo lab. A copy of the C.C. is
shown in table 1.

Values are obtained ^{pre-flight}

~~Hand~~ during and after SMS in flight.

^{502 attached}
^{Writers} Results: - Pre flight training including base line pictures were nominal. ~~Three pictures were taken but~~ ^{without} the necessary photometer data. ~~Thus while the~~ ^{one set of} ~~data~~ ^{SMS was normal} ~~no useful~~ ^{no} ~~data~~ ^{data} be dr.

Facial color
Facial color Background:

This is controlled determined by distribution of which is controlled by the ANS. blood flow to the skin. While pallor is the first sign in ^{motion sickness} ~~ANS~~ on earth, flushing is more likely to be present in SMS. To document this ~~we~~ controlled color photos of the face ~~is~~ were made pre ~~in~~ flight and ^{in flight} during and after SMS.

Procedure: - The standard 35 mm camera lens & flash were used in conjunction ^{with} a two-color targets. One ^{target} consisted of a standard which ^{or slide} be printed ^{with} allowed each picture to have the same balance, i.e., colors would be the same from

roll to roll. A second ^{target wa} comparison chart that spans the usual ^{color} tints of the face ~~is also included~~. This allows an approximation of combinations of facial color by comparison to colors of known differences. The picture is simply taken at a convenient distance using a standard ~~f~~-spot ^(f in inches). The flash ~~was~~ overrides ^{a constant spectrum} other illumination ^{composition} and such that a constant illumination ^{is} produced, ~~is~~ used.

For analysis the ^{color balanced} ~~either~~ slides or prints ~~color balanced~~ ^{best} are used and the color match is selected. In addition, a tri-chromatic micro-^{densitometer} ~~densitometer~~ is used to measure the amounts of color present.

Results: ~~No~~ Preflight training and base line photos were nominal - No inflight photos were

obtained.

Background:

ANS

Temperature - The autonomic nervous system modulates body temperature. ~~The Temperature~~ which is easy to measure. This measurement was another attempt to investigate ANS activity in

SM 5.

Methodology - Oral temperatures can accurately track core temperatures if certain precautions are taken.

Methodology - Oral ^{temperatures} ~~temps~~ were obtained ^{with} ~~the~~ digital paper units. By placing ~~the~~ ^a unit under the posterior tongue and keeping it there for 5 ^{minutes} ~~mins~~ ^{with} the mouth closed will give ~~a~~ reproducible ^{temperature} ~~temp~~ is obtained.

Results - ~~By~~ ^{of} Training and preflight data were nominal. No inflight data was obtained.