Clinical bases of the pathology
of psychophysical development

Methods for studying the autonomic nervous system

Assessment of the state of the autonomic nervous system

- Vegetative tone
- Autonomic reactivity
- Vegetative support of activity

Vegetative tone

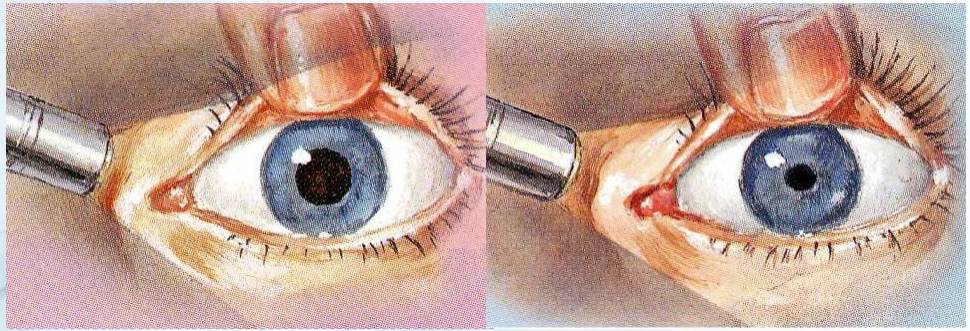
- skin condition
- pupils size & pupillary reactions to light
- indices based on physiological indicators (e.g., VIK – vegetative index Kerdo)

Skin condition

- paleness
- hyperemia
- dryness
- sweating
- trophic changes (hyperkeratosis, ulcers)

Pupils size & pupillary reactions to light

intact mydriasis miosis



study of pupillary reaction to light

Vegetative Index Kerdo (VIK)

$$ВИК = \left(1 - \frac{АД_{диаст}}{ЧСС}\right) \cdot 100\%,$$

- ВИК – Vegetative Index Kerdo
- $АД_{диаст}$ – diastolic pressure
- ЧСС – heart rate per minute

  - near-zero VIK values – vegetative equilibrium
  - positive VIK values – predominance of sympathetic tone
  - negative VIK values – predominance of parasympathetic tone

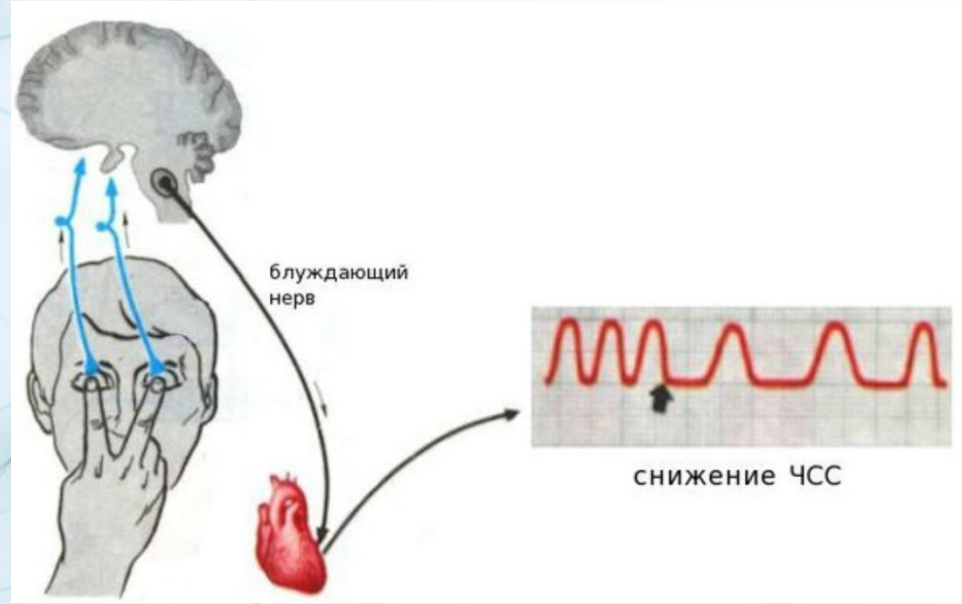
Autonomic reactivity

- pressure tests on reflexogenic zones (Aschner’s reflex, solar reflex)
- dermographism study
- pilomotor reflex test

Aschner’s oculocardiac reflex

is caused by pressing on the eyeballs for 30 seconds

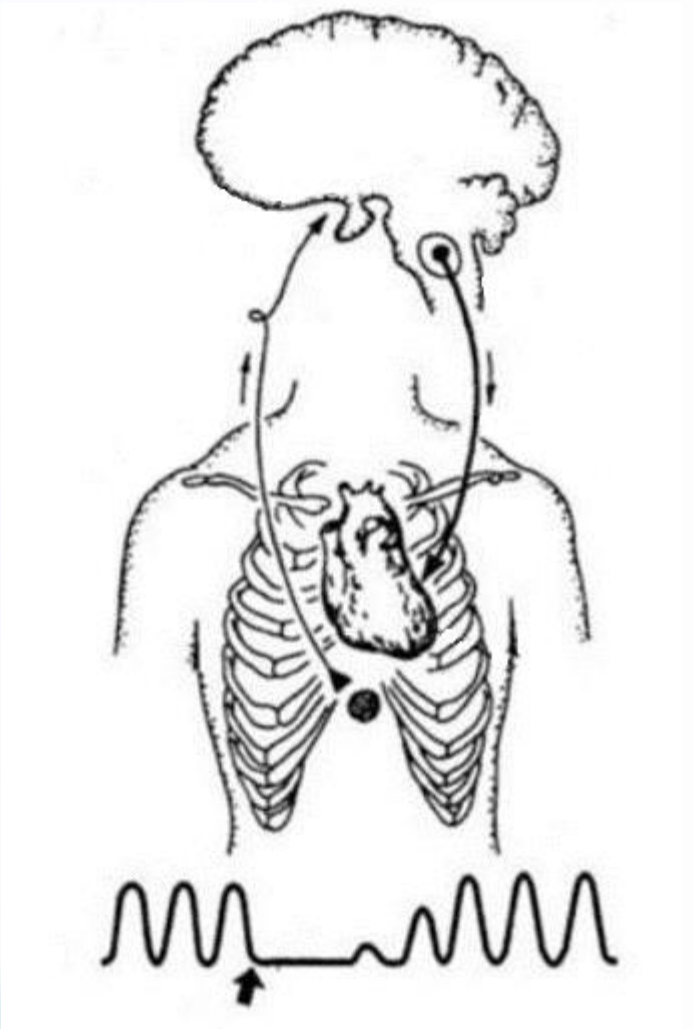
- normally the pulse slows down by 8-10 beats per a minute,
- with vagotonia the heart rate decreases by more than 12-16 per a minute,
- with sympathicotonia it remains unchanged or increases



Solar reflex

is caused by pressing on the epigastric region for 30 seconds

Normally, the pulse slows down by 4-12 beats per a minute. Interpretation of the results is similar to the oculocardiac reflex



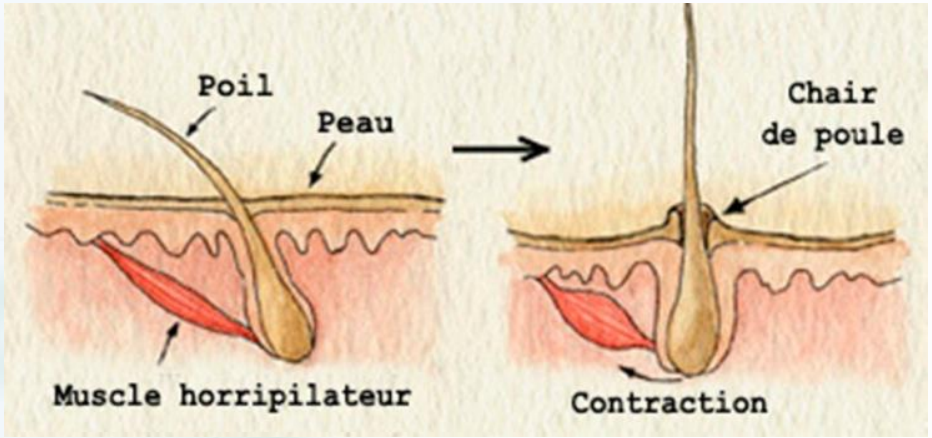
Dermographism is caused by streak irritation of the skin. At the site of irritation, a vascular reaction normally occurs in the form of a pink stripe of hyperemia. With vagotonia, this stripe is intensely red, wide, with raised edges (red dermographism); with sympathicotonia it has a pale color (white dermographism)

red dermographism

white dermographism

Pilomotor reflex

is caused by rapid cooling or pinch irritation of the skin of the forearm. Normally, on the same side of the chest, as a result of contraction of the hair muscles, the effect of “goose bumps” occurs. The reflex disappears in the area of the affected segments with pathology of the lateral horns, anterior roots or sympathetic trunk



Vegetative support of activity

- Modeling of activities
  (physical, mental)
- Physiological tests
  (clinostatic, orthostatic)

Physical activity modeling
is dosed physical activity in the form of bicycle ergometry or squats

Mental activity modeling
in form of subtracting 7 from 200, coming up with 7 words from 7 letters

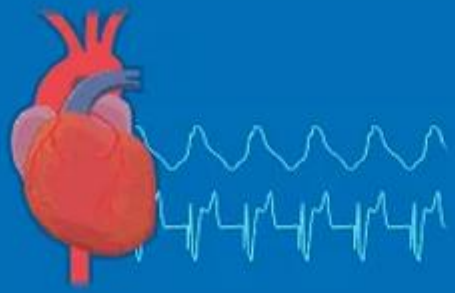
Physiological tests

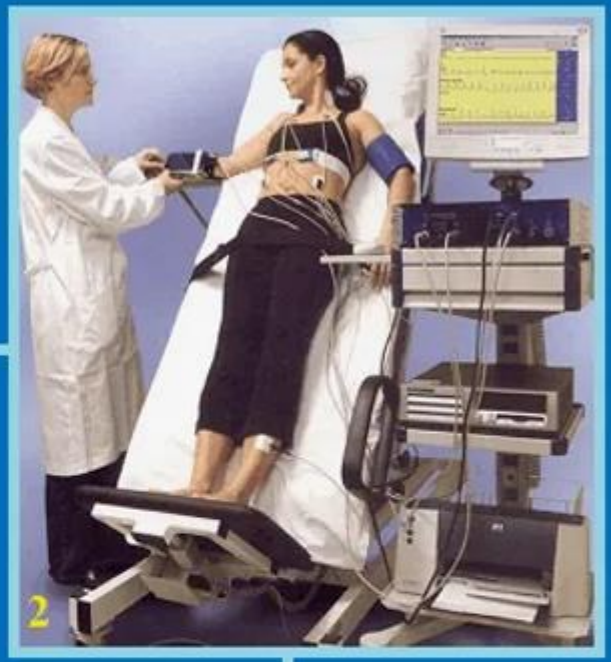
Clinostatic test

when moving from a vertical to a horizontal body position, the pulse normally slows down by 10-12 per a minute. A more pronounced slowdown of the pulse indicates the predominance of the parasympathetic department, the absence of a reaction or increased heart rate indicates the predominance of the sympathetic department

Orthostatic test

when moving from a horizontal to a vertical body position, the pulse normally increases by 10-12 beats per a minute. A more pronounced increase in heart rate indicates sympathicotonia, lack of response or slower heart rate indicates vagotonia

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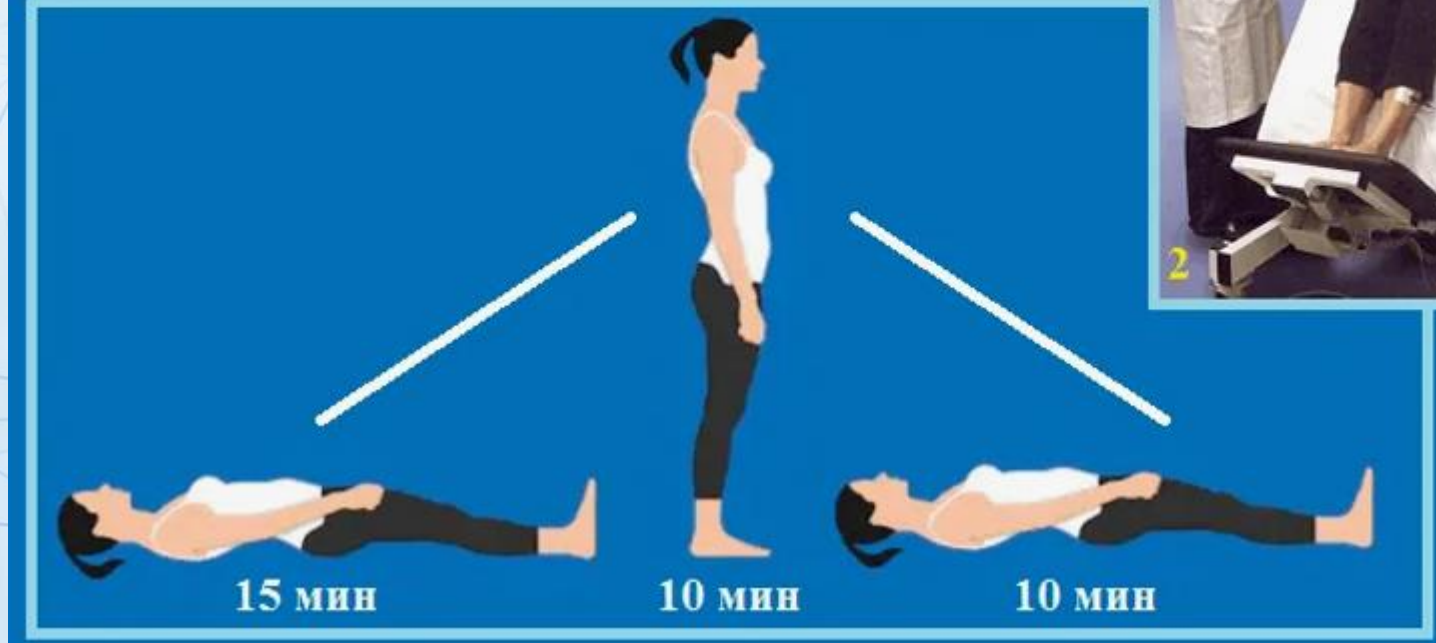
15 мин
10 мин
10 мин


159
106
70