

«Integral Monitoring System «Symona 111»

currently measures 157 vital signs,
and include 7 original integral indicators:

HFI – Heart Failure Index. The normal rate is 0 ± 20 rel.units (r.u.) for a healthy person. It reflects the resistance of the cardiovascular system to physical and mental stress and the cardiovascular risk (CVR). The lower the HFI is, the higher the CVR is. Patients with heart failure have $HFI < -20$. Elite and perspective athletes always have $HFI > 20$, it can even reach 70. When high-level athletes overtrain, their HFI surely keeps positive values, but drops to almost zero.

IB – Integral Balance. The normal rate is 0 ± 100 r.u. for a healthy person. IB characterizes the level of cardio-pulmonary system functioning. IB for well-trained athletes can reach 300-700. Sick people have the reduced $IB < -100$.

CR – Cardiac Reserve. The normal rate is 5 ± 1 r.u. for a healthy person. It defines the existing reserves of the heart functioning. CR can reach up to 11 for well-trained athletes. With any diseases or with the general exhaustion the CR reduces, it is spent on the recovery of the body. The higher the CR is, the greater the endurance and the stronger the ability to perform a large amount of work. The lower the CR is, the worse the functional state of the organism. Sick people have $CR < 4$.

AR – Adaptive Reserve. The normal rate is 500 ± 100 r.u. for a healthy people. AR defines the level of body reserves for performing physical and mental activity. AR of elite athletes can reach 1200-1500. Sick people have $AR < 400$.

STI – Stress Tolerance Index. The normal rate is 10 ± 2 r.u. for healthy person. It defines the body's ability to tolerate stressful physical and mental stress without harm to health. High stress tolerance is when $STI > 12$, normal stress tolerance is when STI is from 8 to 12, low stress tolerance is when $STI < 8$. STI of elite athletes can reach 25.

PFI - Personal Functional Index. The normal rate is 50 ± 10 r.u. for healthy person. PFI characterizes working capacity, functional fitness, endurance and stress resistance. Elite athletes have $PFI > 150$ and can reach 350.

FAC – Functional Aggregated Coefficient. The normal rate is 100 ± 20 r.u. for healthy person. FAC aggregates all integral indicators and reflects an overall picture of the functioning and interaction of 3 vital systems of the body. Rested professional athletes have $FAC > 135$, and the outstanding athletes have $FAC > 180$. When athletes are overtrained, FAC temporarily drops < 100 , and after the recovery of the body it rises to the previous level. In diseases of vital systems, FAC drops < 80 . With severe disorders of vital systems FAC can drop to 20.