

Physical Trauma vs Emotional Trauma

Many of the early investigators in fatigue were shocked to find that the pulse rates and blood pressures were extremely high a short time after the subjects ceased strenuous work or play. Many of these observations were made after about two minutes of rest, and the records were compared with the rates and pressures established as normal for the individuals. The differences often were wide enough to lead to some critical interpretations concerning the effects of strenuous exercise. Statistical studies connected with this research work does not dispute the findings of these other investigators, but there is no question that the methods and interpretations were in error.

First, the pulse rate just preceding a contest is increased by emotional disturbances and in the few minutes before a game is already higher than during normal rest periods even though activity has not yet taken place. Second, few of the investigators checked the pulse immediately upon cessation of work. Had they done so, and then repeated the check after two minutes, they would have found, as did this investigator, that the rate slowed considerably in even this short period. Also, it is in this first two minute interval that those in best physical condition show the most rapid return towards their normal rates. By disregarding the increases caused by emotional strains, and by waiting for several minutes after work had stopped it is obvious that wide variations from the normal resting heart rates and blood pressures would be found. Use of these differences to conclude that the activity was harmful is erroneous as compared to method used here in which the comparisons are made at the start and immediately at the close of the activity period.

Checks on the pulse rates of basketball players and coaches when a game is about to start show their hearts beating faster than normal due to emotional disturbances. If, then, by two minutes after the close of the effort the pulse rates have returned to the same count as at the start it must be concluded that the activity has put no strain on the vital organs that could be considered harmful.

In connection with the topic of the effects of emotions upon the pulse rate some results of personal and restricted observations are worthy of comment. Pulse rates of both players and coaches