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Milan Lab



Science and Technology

MilanLab is the High Tech Scientific Research Centre set up by A.C. Milan with strong motivation, operating since July 2002, and is based inside the Milanello Sporting Centre. The purpose is to optimise the psycho-physical management of the athletes by entrusting this task to MilanLab, which represents the ideal combination of science, technology, IT, cybernetics and psychology..

Objectives

MilanLab contributes strongly to optimising the team's results. The objectives of the studies and the research are to enable athletes to achieve the most optimum performance possible, to reduce the risks of injury and to act in the decision making to support the technical staff and club hierarchy in the management of human resources.

The health of the players: the better the more valuable

The primary object of MilanLab is the protection of each player. Psycho-physical well-being of players is a more valuable asset than that of a football team as a whole, in that those who take the pitch are more important from a sporting point of view than from an economic point of view.

The systematic approach: the organisation as the sum of its components

MilanLab takes its work forward through the development of the concept of the 'systematic vision' of a football team. Whatever the organisation, be it a company or a football team, it can be considered an 'entity' composed of various sub-systems which work in conjunction to determine the overall result of the primary system. The overall productivity of the system is provided from the input of each single sub-system that comprises it: to maximise results as a whole it is necessary therefore to optimise the productivity of every related sub-system, collecting the greatest amount of information from all the areas involved in the process.

The functional levels

At the base of Milanlab there is a dominating vision of understanding health as a total state of physical, mental and social well-being that is dependent on the balancing of three principal functional levels: (neuro)structural, biochemical and mental that together all represent the area of participation.

(Neuro)structural area: is based on the chiropractor approach that emphasizes the intrinsic ability of the body to recover without drugs or surgical intervention.

Biochemical area: the body is considered to be a physio-chemical-biological entity, with focus on the bio-chemical changes occurring in the body during exercise.

Mental area: the study and monitoring of the psychological state of the athlete taking advantage of the Mind Room, a glassed-in facility that helps players relax and relieve stress. The mental training lasts 20 minutes and takes place after every training session. The programme enables up to eight players at a time to make use of comfortable ergonomic seats to view relaxing images while psychologists monitor their mental state via miniature electrodes fitted to the players' head which send out a signal from the scalp to a computer. Head psychologist of the Mind Room is Doctor Bruno Demichelis, the Milan psychologist who uses the facility to improve the recovery rate of the players between matches and to provide scope for them to overcome negative stress.

Artificial intelligence in the service of sport

MilanLab takes advantage of the latest advanced and sophisticated software technologies available in order to collect and to process information. The system of artificial intelligence collects and processes the information, a self-taught mechanism with the ability to learn through the process of memorised data which can determine which factors will cause a player to suffer an injury. The psycho-physical information regarding every player is gathered through a sophisticated system of wiring connected to the Unysis output point and supported by hardware installation supplied by AMD. At this point, a sophisticated software programme developed by Computer Associates performs neural analysis and uses artificial intelligence to transform vast amounts of numeric medical statistics into meaningful predictions through the PAS technology (Predictive Analysis Server), a system that works to predict the possible risks to the players.

Research partnership

MilanLab is a multi-disciplinary research and development project which looks to the future, taking advantage of data gained from past experience. Within this, Milanlab has developed research partnerships with the most prestigious international research centres: SENSEable City Lab of the Massachusetts Institute of Technology (MIT) in Boston (USA); The Department of Bioengineering of the University of Louvain-la-Neuve (Belgium) and the Centre of Research in Epistemology Knowledge and Application (CRESA) of the University Vita-Salute San Raffaele.



Partner for Life

