Infrastructure (Annexure I)





Annexure I: Infrastructure

MGM CHMS is located on the first floor of MGM Superspecialty Hospital in Vashi, Navi Mumbai.The lab is 92 ft long x 23 ft wide x 13 ft high.



Fig: 1 Layout of MGMCHMS

Facility

***** Vicon motion capture system and AMTI force plates:

MGM CHMS is equipped with 12 high end 240 fps optical cameras (Vicon, UK) and three force platforms (AMTI, USA) to measure kinematics and kinetics of human movement.

Vicon Polygon is an integrated visualization and report editing tool enabling quick and easy creation of a gait report. Polygon analyzes trial data that has been created with Vicon motion capture and processing software .It data generated contains modeled by Vicon biomechanical modeling software (such as Plug-in gait, bodybuilder and OLGA). AMTI biomechanics force platforms are designed to measure forces, moments and are sensitive to accelerations as well. Force plates can be used individually or arranged in a walkway format to collect multiple footfalls.









✤ Novel e-med system for plantar pressure analysis:

A platform system is available for plantar pressure analysis (novel emed). E-med[®] pedography platforms are accurate electronic systems for recording and evaluating pressure distribution under the foot in static and dynamic conditions. Platform provides accurate, reliable information for the analysis of foot function and diagnosis of foot pathologies. Foot deformities and malfunction can be detected during analysis of the barefoot pressure data. It consists of calibrated capacitive sensors.



***** Fitmate:

Fitmate Med by COSMED, Italy is an electronic device developed for assessing resting metabolism, cardio-respiratory fitness (VO2max) and basic spirometry (FVC, SVC, MVV). It allows personalized weight management programs and exercise prescriptions according to the ACSM's latest recommendations. It is sensitive equipment that provides accurate respiratory gas analysis and real time oxygen consumption. Energy expenditure of activity is computed and comprehensive analysis of cardio-respiratory and metabolic systems allows for monitoring treatment outcomes and prescription of evidence based activity.



***** Electromyography system:

Delsys Bagnoli EMG System: Delsys Bagnoli EMG DSY-DS-B03 isa 8 channel wire-less device which can be connected to VICON software so that it is helpful in various range of biomechanical research activity such as muscle activity in gait cycle, sports biomechanics.

The ProComp Infiniti: The ProComp Infiniti SA7500 encoder is an eight (8) channel, multi-modality device for real-time computerized biofeedback and data acquisition. It has 8 protected pin sensor inputs with two channels sampled at 2048 s/s and six channels sampled at 256 s/s. The ProComp Infiniti encoder is able to render a wide and comprehensive range of objective physiological signs used in clinical observation and biofeedback. All sensors are completely noninvasive and require little or no preparation for use.











***** Step Activity Monitor:

The Step Activity Monitor (SAM) by Orthocare Innovations is a highly accurate ankle worn ambulatory activity monitor, the size of a small pager. The StepWatch works with a docking station and software that handles stet-up, downloading, display, analysis, and many other functions. It detects steps for a wide variety of normal and abnormal gait style and cadence ranging from a slow shuffle to a fast run. It has a capacity to monitor and store data for a month.



Tanita:

Tanita is the standard and market leader for body composition analyzers.A Tanita body composition monitor provides you with valuable measurements regarding your health. These measurements tell you about your body fat, muscles, metabolism, bone structure and body water.

***** Trunk Leg Dynamometer:

The dynamometer is for assessing trunk and leg strength. Due to its design, it provides an accurate and safe way to take measurements. A trunk dynamometer measures isometric and concentric strength and muscular endurance of the extensors and flexors of the lumbar and thoracic spine. The oversized body includes a solid base for safety as well as cushion handgrips for comfort. Chain adjusts for height differences or to vary the point of force application. Strength indicator remains at subject's maximum reading until reset. The scale measures to 660 lbs. or 300kg

***** Vibrothesiometer:

Digital Vibrothesiometer is a non-invasive tool to detect neuropathy. The vibrometer helps to detect the loss of vibration perception threshold (VPT) accurately. This device is equipped with an electronic tuning fork which has vibration strength that slowly increases till the patient faces the vibration sensation. The digital vibrometer is integrated with a software system that enables storage of data and multiple reports of various patients.







