

tion that describes the sedimentation velocity of single rigid particle. It involves the use of some formulas obtained experimentally in previous investigations and describes a mechanism of erythrocyte sedimentation that consists of aggregation of erythrocytes, sedimentation of aggregates and packing of erythrocytes. The prediction of the erythrocyte sedimentation curve and sedimentation rate is made possible by inserting hematocrit, hemoglobin and some plasma protein concentration values into the equations of the model. A good agreement between the observed and predicted values was obtained.

Kazuo TANIGUCHI, Keizo KADONO, Hiroshi NAKAMURA, Masahiko HIRATA, Mantaro HIGUCHI, Hiromichi YAMAMOTO, Yukimasa NAKASHIMA, Tadao FUJIWARA and Satoshi UEDA :
A Study of the Average Length of Stay of Patients in a Regional Hospital

An analysis of the length of stay of patients in the hospital may be important to the hospital administration in the preparation of diagnostic and nursing plans. In addition, the average length of stay of a patient may often be used as an index of the characteristics of a hospital.

Therefore, the average length of stay of patients discharged from a regional hospital during the last 14 years, was determined and analyzed statistically. Our findings showed that the distribution was not normal but was long and wide. Presented as a logarithm, the results were consistent with a lognormal distribution.

However, in order to determine the reasonableness of diagnostic plans, a better grasp of the characteristics of the diagnostics and effective sickbed utilization as an index of proper hospital administration is necessary. This would require further investigation.

Masaaki TANAKA : Fractals in Biological Rhythms and $1/f$ fluctuations

Recently, many researchers have investigated the fluctuations in biological rhythms, such as the normal cardiac sinus interbeat. Normally, such a rhythm is considered to be regular and rather periodic in young and healthy people, and then becomes irregular with aging or disease. Recent studies, however, have revealed that this is not the case and that the fluctuations play a significant role in regulating and maintaining the organism. The origin of these fluctuation is discussed from the viewpoint of fractal natures in biological organs.

Yoshimi HORI and Seizaburo ARITA : Application of Fuzzy Theory to the Diagnosis of Surgical Site Infection

It is important to prevent surgical site infections after gastrointestinal operations. Therefore

surgeons prescribe antibiotics using their subjective judgments based on many kinds of patient information, such as fever, white blood cell count, complaints of pain, etc. However, infections are difficult to detect because the information used for diagnosis has fuzziness and the logic of detecting is subjective. In this paper, we propose a new system for supporting the diagnosis of surgical site infections using fuzzy inference on the multiple items of patient information.

Mitsushiro NAGAO, Noriki NAGAO, Shuji MATSUEDA, Akio TSUBAHARA, Keiko INOUE, Susumu WATANABE, Toshiyuki TAKAHASHI and Ken AKASHI : An Assessment of Muscle Strength in the Lower Extremity of Older Men — A Comparison of Soccer Players and Non Players —

The purpose of this study was to estimate the muscle strength in the lower extremity of older men. The extension strength of the knee joint in soccer players and non players was compared. There were no significant differences in body composition, BMI, % fat and lean body mass between the two groups. However the extension strength per body weight in soccer players was 0.95 ± 0.19 vs 0.65 ± 0.11 for non soccer players and the difference was significant ($P < 0.01$) between the two groups. It is believed that continuing to play soccer prevents the decline of muscle strength in soccer players.

Shozo YONETANI, Kazuhiko KIMURA and Sho ONODERA : An Investigation of Private Exercise Facilities and their Members in Okayama Prefecture

The purpose of this study was to investigate private exercise facilities and their members in Okayama prefecture. Each facility had an average of 152.3% members. Also, there was one health and exercise trainer for every 99.1 members and one health and exercise leader for every 56.3 members.

Private facility members exercised more frequently. Because they were more concerned with their health and the benefits of exercise. At present, there is a shortage of health and exercise trainers and some members are not completely satisfied with the services available. It is our belief that if private facilities could attract more members, they could increase the number of trainers and services offered.

Yuuko TAKEUCHI, Hiroko WATANABE and Yasuko KATO : An Examination of Procedure for Measuring Secretory IgA in Saliva and the Relationship Between Allergy and IgA Concentration in Students