

## THE STUDY OF THE HYPOXIA AND HYPOBARISM EFFECTS CORRELATED WITH THE SATURATION LEVEL OF ARTERIAL OXYGEN IN PILOTS DURING FLIGHT

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### SUMMARY

**Objective:** The physiological answer of the human body under pressure such as the one generated by flying, where numerous stimuli act simultaneously upon the pilot, has been being studied and researched since the beginning of 1918. Meanwhile, the studies have proved crucial in enhancing the flight security, in the limitations of the accidents through a better adjustment capacity, a timely intervention of the body to compensate the effects generated by the variations of the atmospheric pressure, of temperature, of the body oxygen level and of the effects caused by accelerations, vestibular and visual illusions. The study is meant, on the one hand, to point out to what degree hypoxia and hypobarism affect the function of the correct body oxygen intake, that is its implications at the mental status level and the pilot's capacity of taking the right decision during the flight, and on the other hand, the explanation in terms of statistics of the measured experimental data.

**Method:** Use of a 13-person group, 22aged, submitted to some hypoxia and hypobaric conditions through a hypobaric chamber, in conditions similar to those existing at 5500 m high altitude.

**Conclusions:** According to our study, flying at altitudes higher than 5000 m (without an oxygen mask), even by activating the compensation mechanisms of the body, can cause severe aeronautic accidents because of the mental function distortion.

**Key words:** pulse-oximetry, decrease of the barometric pressure, chemo-receptors

## NEW MARKERS IN ASSESSING CARDIOVASCULAR RISK

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### SUMMARY

We all are aware of the clinical laboratory's role in assessing overall health population and we are also aware that measuring a patient's serum lipids will provide some insight into their cardiovascular health. Low-density lipoprotein cholesterol (LDL-C), high-density lipoprotein cholesterol (HDL-C), and triglycerides are the 'classic' biochemical cardiovascular risk markers. So, what is the risk if these values of biochemical markers are not within optimal range of serum concentrations?

An important question that should always be asked is "how many risk markers do we need?"

By evaluating several markers of cardiovascular risk, the research in the clinical laboratory can be used to support patients and the result of such research can also be used to motivate patients to change their lifestyle and diet.

**Key words:** total cholesterol, HDL cholesterol, LDL cholesterol, Apo A, Apo B, oxidized LDL cholesterol

## THERAPEUTICAL STRATEGIES IN CONCOMITANT CAROTID AND CORONARY DISEASE

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### SUMMARY

Carotid artery stenosis is an important cause of ischemic stroke. There is evidence that current carotid revascularization techniques (carotid endarterectomy and carotid artery angioplasty with stenting) decrease significantly stroke recurrence. Many of the patients with carotid artery lesions have concomitant coronary artery disease, needing revascularization procedures in both territories. Optimal treatment for patients with both carotid and coronary disease remains controversial in clinical practice because interventional revascularization procedure in one vascular territory might lead to severe complications in the other territory. Percutaneous revascularization techniques (angioplasty with stenting) might decrease complications when used in combined treatment of the two vascular territories, but therapy should be strictly individualized.

**Key words:** stroke, carotid stenosis, coronary disease, coronary artery bypass graft, endarterectomy, angioplasty with stenting

## CT ANGIOGRAPHY OF SPONTANEOUS PORTOSYSTEMIC SHUNTS

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### SUMMARY

**Purpose** - To list and to recognize the common portosystemic shunts encountered in patients with portal hypertension. To describe the modifications to routine abdominal CT that is needed to maximize the imaging of portosystemic shunts.

**Results** - A helical CT acquisition during the portal phase of enhancement is sufficient for correct evaluation of portal and variceal anatomy. Three-dimensional reconstruction of portal system enhances the perception of the courses and anatomic relationships of varices. Common varices include the left gastric vein, short gastric veins, paraumbilical veins, and splenic vein.

**Conclusions** - CT angiography allows the surgeon to decide in advance the type of the operative approach (the need for varix ligation). In cases of complex shunts, 3D rendering is indispensable.

**Keywords** - CT angiography, Portosystemic shunts, Varices

## SKIN CANCER - CLINICAL ASSESSMENT AND STAGING

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### SUMMARY

Cutaneous malignancies are the most frequent cancers affecting people and the most common types are basal cell carcinoma (BCC) and squamous cell carcinoma (SCC). Although the skin of the head and neck accounts for less than 10% of the body surface

area, a large portion of cutaneous malignancies occur in this region, a factor that is directly related to the large amount of actinic radiation this region receives compared with the remainder of the skin surface. In the United States, an estimated 600.000 to 1.000.000 new cases of basal and squamous cell skin cancer are diagnosed yearly. The ratio of basal cell to squamous cell skin cancers is approximately 4:1 and remains constant. Men are afflicted with nonmelanoma skin cancer twice frequently as women and this disease usually occur in older individuals who are in their sixth and seventh decades. Depending of latitude of habitation, individuals 55 to 75 years of age have four to eight times the incidence of nonmelanoma skin cancer compared with individuals 20 years of age or younger. Alarmingly, then appears to be a significant increase in the incidence of squamous cell skin cancer a rate of approximately 4 to 8% per year since the 1960's.

This paper will focus on risk factors for developing nonmelanoma skin cancer, clinical assessment, identifying the patient at high risk for recurrence and outcome of treatment.

**Key words:** basal cell carcinoma, skin cell carcinoma, ultraviolet radiation, local dissemination, metastases.

### **AMILOID ARTHROPATHY ASSOCIATED WITH PROLONGED HEMODIALYSIS IN PATIENTS WITH CHRONIC KIDNEY INSUFFICIENCY**

**Ileana Bucur M.D., Assoc.prof. Gilda Mologhianu M.D., Ph.D., , Manuel Bucur M.D.**

#### **SUMMARY**

Amyloidosis is a current complication in patients with chronic renal failure, treated by prolonged haemodialysis. The immunochemical structure of this amyloid is similar to that of the beta-2-microglobulin, with affinity to the conjunctive tissue inside and around the joint. Clinical and radiological manifestations are various, including arthropathies of joints like scapulohumeral and knee, leading to a lot of therapeutic problems due to the kidney prior pathology.

**Key words:** amiloydosis, hemodialysis, arthropathy

### **PSI-SELTEVA SYSTEM APPLICATIONS IN AERONAUTICS DOMAIN**

**Psih. Dumitra Profeanu**

#### **SUMMARY**

Attention is a psycho-physiological process which consists in selective orientation and concentration of the mental activity of certain stimulus or tasks in order to acquire an optimal perception, an adequate resolution of tasks of difficult situations and for the sensory-motor, cognitive and affective behavior adaptation to external mobility conditions and the dynamics of individual motives and personal goals.

Concentration is the most important dimension of attention, which expresses the degree of selective activation and intensity of outbreaks in the dominant structures and brain areas involved in the development process or specific mental activity.

It may take different values both one to other subject and the same subject at different moments of time, depending on the characteristics and content of tasks and its internal state (motivational, affective etc).

The paper's aim is to determinate, in laboratory conditions, the concentration's level of attention (low, medium and high) in the aeronautical personnel.

**Method and materials:** concentrate attention test on the computer, part of "PSI-SELTEVA" battery for psychological evaluation.

**The results** show a general image of investigated characteristics in tested subjects. Their utility consists in making a comparison between different professional aeronautical categories of and between subjects whit a professional experience and subjects with no such an experience.

**Keywords:** concentrate attention, learning ability, resistance disturbing factors.