The cardiopulmonary exercise test (CPET) permits the most accurate and reproducible quantification of cardiopulmonary fitness, a grading of the etiology and severity of cardiopulmonary impairments, and an objective assessment of the response to an intervention. Moreover, over the last three decades, a large volume of research has been directed toward the utility of CPET as a diagnostic and prognostic tool; these studies have established CPET as a scientifically sound and, therefore, clinically valuable method for accurately assessing exercise limitation and prognosis in various disease states. The CPET is relatively easy to perform, yet complex in the interpretation of the results. The current review presents the principles of the analytic process of the test results, in order to obtain possible diagnoses.
As of 1.1.2013, out of 24,811 persons awarded the status of Righteous Among the Nations, 245 (1%) were physicians and 31 were medical students. They were active in helping and saving Jews in various ways: surgery for hiding signs of Jewish identity, hospitalizations, smuggling medical supplies into the ghettos, providing false documents, hiding people and active fighting. We must remember them and pay them homage. We are equally obligated to the Jewish physicians, who saved the lives of other Jews during the Holocaust, at the risk of their own lives.

HOW MANY PHYSICIANS ARE ACTIVELY PRACTISING MEDICINE IN ISRAEL? ON THE DIFFERENCES BETWEEN VARIOUS METHODS OF MEASUREMENT

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In 2018, Israel replaced the workforce surveys of the Central Bureau of Statistics with administrative data files, as the source of its reports to the OECD on the number of physicians practising medicine and their percentage of the population. In the wake of the change, the scope of the medical workforce reported by Israel dropped by approximately 9%-15% in each one of the years from 2012-2015. Furthermore, while according to the previous measurement approach, Israeli figures were consistently equal to or higher than the yearly OECD averages, according to the new method these figures are lower than the averages of other OECD members. Essentially, according to the new data, the number of physicians practising medicine in Israel straddles the minimum desirable amount recommended in the past by workforce planning committees in Israel. The new data are largely accordant with the feeling of distress and shortage in the medical workforce, which pervades the health system for many years, and simultaneously raise questions as to the reliability of official Israeli data as reported to the OECD - data upon which researchers, policy makers, the media and the public rely. Consequently, it is recommended to consistently improve the measurement and reporting to international organizations and to increase transparency regarding the measurement methods of various indicators in the health field.

ENDOMETRIAL-PATTERN IN EARLY PREGNANCY AND CORRELATION WITH ECTOPIC-PREGNANCY

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Introduction: Ectopic-pregnancy is a leading cause of pregnancy-related maternal death in the first trimester. Early sonographic diagnostic ability of ectopic-pregnancy is limited. There is an increasing need to identify sonographic markers that can assist with the diagnosis.

Objective: To characterize the endometrial-pattern by transvaginal-ultrasound as an early marker for ectopic-pregnancy, before demonstration of tubal mass.

Methods: A multicenter prospective study that included 52 women with a positive HCG test, referred to the ultrasound-unit with a diagnosis of pregnancy of unknown location. A transvaginal ultrasound was performed focusing on the endometrial-pattern, and classifying findings into four categories: homogeneous, heterogeneous, three-laminar and existence of fluid collection within the endometrial cavity.

Results: A total of 38 women were diagnosed with ectopic-pregnancy. Three women demonstrated normal intrauterine pregnancy, 3 others had an early miscarriage and 8 women were excluded from the study. No statistically significant differences were found between the groups in terms of demographic, clinical, or laboratory characteristics. Three-laminar pattern had 94% positive predictive value and 18% negative predictive value for ectopic-pregnancy, with sensitivity and specificity of 42% and 83%, respectively. Changes in the endometrial-pattern were demonstrated during subsequent tests when performed.

Conclusion and discussion: Three-laminar pattern has high PPV for predicting ectopic pregnancy in women with pregnancy of an unknown location. The changes in the endometrial-pattern during subsequent tests, especially the transition of three-laminar into homogeneous pattern, a phenomenon not reported in previous studies, raised the need for further studies.

Conclusion: The use of transvaginal-ultrasound to identify the endometrial-pattern in early pregnancy does not require significant expertise. The identification of three-laminar endometrium in pregnancies of an unknown location, should raise the suspicion of ectopic-pregnancy.

PRINCIPLES FOR THE INTERPRETATION OF CARDIOPULMONARY EXERCISE TESTS (CPET)

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errors associated with medicines’ risk factors and patients’ characteristics, led the researcher to her secondary objective: to study the source of error, type of discrepancy and class of medicine most frequently implicated during the transition of care from an acute to a rehabilitation hospital.

Methods: The researcher performed a retrospective investigation and study of 356 patients with 3071 prescription medications referred from an acute hospital. The inclusion criteria also included ventilated patients over the age of 18 who received more than five prescription-only medicines. Over a period of 12 months, the investigator ascertained what medications were used prior and post-admission stage and then compared these drugs. The discrepancies identified were discussed with the attending physician. Unintended discrepancies were classified as errors.

Results: Unexplained errors which resulted in physician changes affected 154 patients, 43% of the total number of the study participants. The findings show that the most common cause of error found during the reconciliation of medicines at the point of admission is the use of patients own medications in the process.

The most accurate and up to date source of information during the reconciliation process is the medication list brought with the patient upon admission. The wrong route of administration was the most common type of error that was found. Errors were concerned with important drug categories such as cardiovascular and antidiabetic drugs. The average number of drugs per patient is 9, while each of the studied population had a mean of two or more errors in admission. Although men were treated with an average of 10 medicines and females received only 8, the number of discrepancies was higher in females.

Conclusions: Pharmacists play an important role in determining discrepancies and medication errors during patients’ admission. This study provides an insight into the discrepancies that occur in this unique setting. Stakeholders may wish to adopt the recommendations provided by the author and act in order to improve the patients’ safety in rehabilitation hospitals. Some of the recommendations are also applicable to other health care settings.

Paraparesis Due to Rhabdomyolysis and a Compartment Syndrome in Five Patients Who Had Been in a Prolonged Sleep in a Sitting Position

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Five patients developed symmetrical paraparesis due to a combination of: compartment syndrome, rhabdomyolysis, renal failure, and demyelinating sensory-motor polyneuropathy, after prolonged sleep in a sitting position. The long deep sleep was induced by consumption of alcohol or drugs. Long-term follow-up showed that these patients remained paraparetic. No damage to the autonomic nervous system was found. Although some suspected that these patients developed “intensive care neuropathy”, we suggest that this syndrome is different, and should be regarded as a “new syndrome”.

Changes in the Way We Observe, Assess and Treat Aphasia: From the Traditional Linguistic Approach to the Psycholinguistic and Social Approaches

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Aphasia is an acquired language impairment, initially identified and described before the 19th century. According to traditional models (Wernicke-Lichtheim-Geschwind) the aphasic symptoms can be clustered into particular syndromes, such as Broca’s, Wernicke’s, Conduction aphasias, and more. Each syndrome is allegedly associated with a specific anatomical site. The major motivation for this model was to use the behavioral symptoms to learn about language and brain relationships. However, current advanced imaging techniques identify more precisely the loci of the deficit. Moreover, the model frequently fails to adequately describe the clinical symptoms, a description that is crucial for understanding the language deficit and for choosing the relevant treatment. For more than three decades, two alternative models are being used in the clinical setting and in research. First, the psycholinguistic model, which describes the normal stages that are involved in language processing. On the basis of this model it is possible to detect, for each individual with aphasia, the specific impaired stage or stages underlying the language deficits. Second, the social model of aphasia based on the ICF definitions of the World Health Organization. According to this model, it is suggested that the speech therapy intervention should focus not only on the language deficits but also on communication per se in order to enable the individual with aphasia to communicate with others despite the language deficits. In the current paper we will review these two models and their clinical implications.

Physicians Righteous Among the Nations and Other Heroes

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FALL PREDICTION AND FALL SEVERITY IN REHABILITATION HOSPITAL

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Background: Patients in rehabilitation hospitals are exposed to fall-risking conditions. Falls with severe outcomes can extend the hospitalization, and increase the workload on health systems. Fall risk assessment at the beginning of hospitalization is crucial for making supportive and preventive adjustments. The Israel Ministry of Health obliges using fall risk assessment at hospitalization. Nonetheless, fall risk assessment has not been validated in Hebrew, and has not been tested for prediction power of fall severity outcome.

Aims: We tested whether the Farmer questionnaire is valid for fall risk assessment in Hebrew. We tested whether NDNQI is valid for fall severity evaluation in Hebrew. Finally, we tested whether the Farmer and NDNQI are correlated.

Methods: Farmer measurement was validated in 1187 patients retrospectively, out of whom 288 had fallen during hospitalization. Twenty-five fall cases with varying severities were ranked by 47 staff members for their fall severity score. Non-parametric Spearman’s correlation was tested between Farmer and NDNQI measurements.

Results: Mean Farmer value of the falling group was larger than the mean Farmer value of the non-falling group (F=9.5, p<0.002). Variability between raters was smaller than variability between conditions in NDNQI (ICC(2,1)=0.75). Farmer index was not correlated with NDNQI score (r=-0.092, p=0.118).

Conclusions: Farmer measurement is a valid tool for fall risk assessment in Hebrew, NDNQI is a valid tool for evaluation of fall severity. Farmer index is not predictive of fall severity.

Discussion: There is a need for predictive measures of fall severity outcomes. We recommend using fall severity scores for ranking the intervention’s success.

FROM THEORY TO THE CLINIC – IS IT POSSIBLE TO DETECT DIFFERENT TYPES OF ANOMIA ACCORDING TO THE LEXICAL RETRIEVAL MODEL?

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Introduction: The lexical retrieval model describes the process of naming – from the level of an abstract concept representation to the production of the word. Lexical retrieval includes several distinct levels. A deficit in any of these levels causes anomia, a naming deficit, and deficits in different levels cause different types of anomia.

Aims: To examine whether the theoretical model can be applied in the clinic. Namely, whether it is possible to identify, for a specific patient, the exact impaired lexical retrieval level, and to show that different patients are impaired in different levels.

Method: The performance of 24 participants with aphasia, with lexical retrieval deficits, were analyzed. The analysis included performance on a naming test – including analysis of error types and of the effects that modulate naming errors. We also analyzed the performance in other language tasks that examine the different levels of lexical retrieval, including tasks that do not involve naming.

Results: Different types of anomia were found for the different participants. The various types of anomia are reflected in different sorts of naming errors, in different effects that modulate naming errors, and in different performance patterns in the other language tasks.

Discussion: The distinction between the different types of anomia is important for choosing the appropriate treatment for each patient.

Summary: The theoretical model of lexical retrieval can underpin descriptions of clinical phenomena. The findings support the view that the relations between theory and clinic are bidirectional – theories constitute an anchor for the description of clinical phenomena, and clinical findings can support, or refute, theory.

AN INVESTIGATION INTO THE ROLE OF A REHABILITATION HOSPITAL PHARMACIST IN DETERMINING DISCREPANCIES AND MEDICATION ERRORS DURING PATIENTS’ ADMISSION

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Introduction: The importance of correcting medication errors at hospital admission is paramount for promoting error-free delivery and continuity of care. Recently stakeholders have paid considerable attention to patient safety in acute-care hospitals but less is known about discrepancies and medication errors during patients’ admission in other health care settings, such as post-acute care providers. An increased understanding of errors that occur in rehabilitation hospitals, would better equip stakeholders in taking actions to improve the safety of patient care in this unique setting.

Aims: The primary aim of the current study, conducted in a rehabilitation health care setting, is to study the pharmacist’s role in identifying and preventing unintended medication discrepancies at the time of their hospital admission. The lack of available information on medications
REHABILITATION MEDICINE ADDS LIFE TO THE YEARS

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The Reuth Rehabilitation Hospital is a university-affiliated Medical Center, the biggest of its kind in Israel. Reuth’s unique structure combines both a Rehabilitation Hospital with a Geriatric Medical Center. The hospital offers both inpatient and outpatient services with a diversity of conditions through a rehabilitative, holistic, multi- and interdisciplinary approach. Patients and their families are at the center of attention, alongside focus on professional excellence, academic instruction and research and development. In the current paper, the principles and unique approach guiding the activities and development of the Reuth Rehabilitation Hospital are presented.

EXECUTIVE FUNCTIONS AND DAILY FUNCTIONS, ROAD SIGN RECOGNITION AND DRIVING SELF-REPORT AMONG HEALTHY AND POST-STROKE DRIVERS

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Introduction: Driving is an essential part of occupational performance. In determining potential driving competence, there is a lack of screening tools to ascertain who should be referred for further assessment in Occupational Therapy or at the Medical Institute for Road Safety.

Purpose: To assess the relationship between executive-function, daily-functions and driving behavior measures in unimpaired and neurologically impaired populations.

Research Method: An exploratory study that included 19 subjects - 10 without neurological impairments - and 9 post-stroke. Self-report questionnaires on driving ability, executive-functions and daily-function were administered. Post-stroke subjects were also assessed on road sign recognition.

Results: The research hypothesis was not confirmed. Three moderately correlated but statistically insignificant correlations were found: in unimpaired subjects between the driving self-report and functional status; in post-stroke subjects - between the driving self-report and self-monitoring and behavioral-regulation skills and in the road sign recognition tests - between executive and daily-function measures.

Conclusions: If the trends were strengthened in a larger sample size the use of driving behavior self-report questionnaires, executive-function, daily-function and road sign recognition tests as screening tools for the unimpaired and post-stroke populations would be effective/recommended.

Discussion: Present findings of correlations between self-report of driving skills and behavioral regulation skills confirm previous research findings.

Summary: Although the research findings were not statistically significant, the trend points to the correlation between executive-function measures and self-report driving ability. Road sign recognition tests and daily-functions were found to be potential screening tools for assessing driving potential, but a larger sample size is recommended to confirm results.

RECRUITMENT PATTERNS OF HOMOLOGOUS MUSCLES DURING UNILATERAL MOVEMENT IN HEMIPARETIC SUBJECTS

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Introduction: The presence of unintentional muscular activity, with or without overt movement, in the homologue muscle contralateral to the limb being activated voluntarily, has been documented in both healthy and hemi-paretic populations. This activity has been termed contra-lateral motor irradiation (CMI), mirror movement, associated movement, motor overflow or synkinesis.

Aim: To characterize the CMI phenomenon amongst healthy controls and patients with varying degrees of motor ability and also to assess the ability to consciously control this phenomenon.

Method: A cross-sectional design was used to study sub-acute (within 6 weeks of the insult) stroke patients; assessments were performed within two weeks of commencing rehabilitation and again after 4 weeks. Healthy controls were assessed once. A simple motor task, unilateral extension of wrist and fingers, was examined. Concomitant muscular activity of the homologue muscle on the contralateral upper limb was the focus of interest; EMG activation was monitored on both sides. The Fugl-Meyer test was used to assess the residual motor capacity of the upper limb.

Results: CMI was demonstrated only in the non-paretic hand during voluntary activation of the paretic hand. The study group, unlike the control group, was unable to consciously reduce CMI.

Conclusion: Although the mechanisms underlying CMI are poorly understood, they reflect an important aspect of inter-hemispheric relationship in motor control. In stroke patients, CMI monitoring by surface EMG can be used to assess its characteristics following damage to different elements of the motor system.