

## Abstract Selection

**Do nasal ciliary changes reflect bronchial changes? An ultrastructural study.** Verra, F., Fleury-Feith, J., Boucherat, M., Pinchon, M. C., Bignon, J., Escudier, E. Service de Pneumologie, Hôpital Intercommunale de Creteil, France. *American Review of Respiratory Diseases* (1993) Apr, Vol. 147 (4), pp. 908–13.

Ciliary dyskinesia is characterized by recurrent respiratory tract infections secondary to abnormal ciliary structure and function. The diagnosis of ciliary dyskinesia is based on the detection of axonemal ultrastructural abnormalities (AUA) in respiratory mucosa samples. In most cases, the diagnosis of AUA is made on samples obtained from nasal ciliated cells with little discomfort to the patient. However, no studies have been performed in the same patient to confirm whether nasal samples reflect bronchial ciliary changes. To answer this question and to determine whether it is necessary to sample bronchial cells for the diagnosis of ciliary dyskinesia, we investigated 12 patients (between the age of 5 and 63 years) with chronic sputum production. The presence of situs inversus, bronchiectasis, chronic sinusitis, and sterility was investigated to determine an inherited disorder. Two groups were established: Group 1 = six patients with an inherited disorder and Group 2 = six patients without evidence of an inherited disorder. Samples were obtained by brushing or biopsy of nasal and bronchial mucosa and were processed for transmission electron microscopy. In Group 1, the mean AUA was  $65.2 \pm 11.4$  per cent. The following predominant axonemal defects were found: absence of dynein arms (DA) (four patients), central complex abnormalities (CC) (one patient), and various AUA (one patient). Nasal and bronchial samples correlated significantly for total AUA ( $r = 1, P < 0.01$ ) and for outer DA defects ( $r = 0.96, P < 0.05$ ). A good but not significant correlation was found for inner DA ( $r = 0.83$ ) and peripheral microtubule (PM) defects ( $r = 0.71$ ). In Group 2, the mean AUA was  $9.6 \pm 2.3$  per cent. No predominant defects were found and the correlations were low and not significant. In conclusion, when the ultrastructural study demonstrated a ciliary abnormality, the results found in nasal and bronchial samples were similar concerning the percentage of abnormal cilia and the main ultrastructural defects. The study of nasal ciliated cells is sufficient to reach the diagnosis when most of the cilia are abnormal, especially when DA defects are predominant. When a small percentage of cilia are abnormal with various AUA or predominant CC defects associated with clinical suspicion of inherited disease, a bronchial sample must be studied. Author.

**Brainstem auditory evoked response during propofol anaesthesia in children.** Purdie, J. A., Cullen, P. M. Department of Anaesthesia, Royal Hospital for Sick Children, Yorkhill, Glasgow. *Anaesthesia* (1993) Mar, Vol. 48 (3), pp. 921–5.

The effect of propofol on the brainstem auditory response was studied in 10 healthy children presenting for elective general surgery. A computer-controlled infusion of propofol was used to induce and maintain anaesthesia. Basal brainstem auditory evoked responses were recorded in the awake child and at different infusion rates of propofol. Significant increases in the latencies of the brainstem waves III and V and the interpeak intervals I–V and III–V were seen and were dose dependent. The changes were small and would not preclude the use of propofol anaesthesia for brainstem auditory evoked response testing in children. Author.

**The management of tracheal rupture using bilateral bronchial intubation.** Mitchell, J. B., Ward, P. M. Department of Anaesthesia, St Mary's Hospital, London. *Anaesthesia* (1993) Mar, Vol. 48 (3), pp. 223–5.

The management of a patient who required positive pressure ventilation following pharyngolaryngo-oesophagectomy during which tracheal injury was sustained is described. Ventilation with a tracheal tube resulted in a massive pneumoperitoneum. Bilateral bronchial intubation was employed with success. Author.

**A very small dose of suxamethonium relieves laryngospasm.** Chung, D. C., Rowbottom, S. J. Department of Anaesthesia and Intensive Care, Prince of Wales Hospital, Shatin, Hong Kong. *Anaesthesia* (1993) Mar, Vol. 48 (3), pp. 229–30.

Intravenous suxamethonium, in a dose as small as 0.1 mg/kg-1, has been found to be reliable in the treatment of laryngeal spasm. Three episodes of vocal cord spasm observed during direct laryngoscopy were relieved by this dose of suxamethonium. Author.

**Anaesthesia for procedures on the larynx and pharynx. The use of the Bullard laryngoscope in conjunction with high frequency jet ventilation.** Mendel, P., Bristow, A. Department of Anaesthesia, St Bartholomew's Hospital, West Smithfield, London. *Anaesthesia* (1993) Mar, Vol. 48 (3), pp. 263–5.

Twenty patients undergoing elective procedures on the larynx and pharynx were anaesthetized using a propofol infusion and a bolus of vecuronium. High frequency jet ventilation was employed via a 7 French gauge catheter, with a second catheter being used to measure expired carbon dioxide levels. The Bullard laryngoscope was compared with the Macintosh instrument both for visualizing the larynx and subsequently inserting a catheter. One catheter was left in place until the patient was fully awake, and in one case this enabled gas exchange to be maintained in the presence of laryngospasm. Using the Bullard laryngoscope, intubation was possible in all 20 patients, in a mean time of 22 (6.8) s. Using the Macintosh laryngoscope only 16 patients could be intubated and this took significantly longer at 34 (18.3) s ( $P < 0.05$ ). The Bullard laryngoscope and high frequency jet ventilation offer a reliable method of intubating and anaesthetizing patients with upper airways pathology and further benefits may accrue in the recovery period. Author.

**Loss of hypoxic ventilatory response following bilateral neck dissection.** Moorhy, S. S., Sullivan, T. Y., Fallon, J. H., Dierdorf, S. F., Radpour, S., De Atley, R. E. Department of Anaesthesia, Indiana University Medical Centre, Richard L. Roudebush VA Medical Centre, Indianapolis. *Anesthesia and Analgesia* (1993) Apr, Vol. 76 (4), pp. 791–4.

Modified radical neck or combined radical and modified radical neck surgery is performed for treatment of head and neck cancer. Because of the extensive nature of the surgery, including dissection around the carotid vessels, we prospectively evaluated hypoxic ventilatory responses preoperatively and postoperatively in five patients. The change in ventilation to percent desaturation varied between  $-0.22$  and  $-0.60$  L/min per per cent desaturation in the five study patients. In the postoperative evaluation, two of five patients showed flattened responses compared with the preoperative measurements due to denervation of their carotid bodies. Two patients showed increased responses due to loss of upper airway resistance from tracheostomy. We conclude that after bilateral neck dissection for cancer surgery some patients may lose their hypoxic ventilatory responses due to carotid body denervation. Author.

**Amyloidosis of the respiratory tract.** Rysankova, J., Krpensky, A., Fiser, F. *Czechoslovak Journal of Otolaryngology and Pharyngology* (1993) Vol. 42, pp. 41–44.

Diffuse amyloidosis of the tracheo-bronchial mucosa in a 57-year-old woman is reported. The patient presented with recurrent haemoptysis. Endoscopy showed the tracheal and the bronchial mucosa at the bifurcation greatly thickened coarse and infiltrated by extensive amyloid deposits. Microscopy showed the amyloid material surrounded by large numbers of multinuclear foreign-body type giant cells. The patient had received laser-treatment, the mucosa regaining its normal appearance within six months and the patient remaining well for about three years after the treatment.

**Cholesteatoma and cholesterol granuloma of the petrous-pyramid-diagnosis and treatment.** Koval, J., Enouri, A., Sterkers, J. M. *Czechoslovak Journal of Otolaryngology and Pharyngology* (1993) Vol. 42, pp. 15–19.

This paper is based on five patients operated on by J. M. Sterkers and describes the clinical surgical and theoretical problems of the so-called congenital cholesteatoma and of a cholesterol granuloma of the petrous pyramidal bone. The authors emphasize the diagnostic difficulties.

**Auditory brain-stem responses in blepharospasm.** Creel, D. J., Holds, J. B., Anderson, R. L. VA Medical Centre, Salt Lake City, UT 84148. *Electroencephalography and Clinical Neurophysiology* (1993) Feb, Vol. 86 (2), pp. 138–40.

The auditory brain-stem response (ABR) has been reported to detect abnormalities in both the auditory pathways and in adjacent structures. Ten of 35 consecutive patients with blepharospasm were found to have abnormal ABRs involving poor form and delayed peak latency of positive components III or V. Abnormal ABRs in approximately 30 per cent of patients with essential blepharospasm suggest pathology in the brain-stem of a substantial proportion of patients with this form of cranial-cervical dystonia. Author.

**The mismatch negativity cortical evoked potential elicited by speech in cochlear-implant users.** Kraus, N., Micco, A. G., Koch, D. B., McGee, T., Carrell, T., Sharma, A., Wiet, R. J., Weingarten, C. Z. Department of Communication Sciences and Disorders, Northwestern University, Evanston, Illinois. *Hearing Research* (1993) Feb, Vol. 65 (1–2), pp. 118–24.

The mismatch negativity (MMN) event-related potential is a non-task related neurophysiologic index of auditory discrimination. The MMN was elicited in eight cochlear implant recipients by the synthesized speech stimulus pair /da/ and /ta/. The response was remarkably similar to the MMN measured in normal-hearing individuals to the same stimuli. The results suggest that the central auditory system can process certain aspects of speech consistently, independent of whether the stimuli are processed through a normal cochlea or mediated by a cochlear prosthesis. The MMN shows promise as a measure for the objective evaluation of cochlear-implant function, and for the study of central neurophysiological processes underlying speech perception. Author.

**Interrelations between transiently evoked otoacoustic emissions, spontaneous otoacoustic emissions and acoustic distortion products in normally hearing subjects.** Moulin, A., Collet, L., Vuillet, E., Morgon, A. Université Claude Bernard, Laboratoire de Physiologie Sensorielle Audition et Voix, Unité associée au CNRS 1447, Hôpital Edouard Herriot, Lyon, France. *Hearing Research* (1993) Feb, Vol. 65 (1–2), pp. 216–33.

Active cochlear mechanisms and especially outer hair cells seem to be involved in oto-acoustic emissions (OAEs) genesis. This study sought to investigate basic characteristics of spontaneous otoacoustic emissions (SOAEs), click-evoked otoacoustic emissions (TOAEs) and interrelations between SOAEs, TOAEs, and 2f<sub>1</sub>–f<sub>2</sub> and 2f<sub>2</sub>–f<sub>1</sub> distortion product OAEs (DPOAEs) in 135 normally hearing subjects. A gender effect was shown on TOAEs and DPOAEs amplitude, and is attributed to the higher incidence of SOAEs in women (58 per cent) than in men (22 per cent). Moreover, SOAEs presence seems to mask the age effect found, especially at high frequency components, on TOAEs amplitude. A general influence of SOAEs on TOAEs and DPOAEs is shown, especially at frequencies ranging from 1 kHz to 3 kHz, collecting more than 66 per cent of the SOAEs peaks recorded. Lastly, correlations between TOAEs frequency band amplitude and 2f<sub>1</sub>–f<sub>2</sub> DPOAEs amplitude, shows frequency specificity, at least at low frequencies (i.e. form 0.5 to 2 kHz) in agreement with previous works suggesting that the 2f<sub>1</sub>–f<sub>2</sub> DPOAEs generation site is at the geometric mean of the primaries. The same correlations calculated with 2f<sub>2</sub>–f<sub>1</sub> DPOAEs amplitude show frequency specificity at low frequencies i.e. at 800 Hz and 1600 Hz. 2f<sub>2</sub>–f<sub>1</sub> DPOAEs in humans are shown to be generated near the 2f<sub>2</sub>–f<sub>1</sub> frequency region on the cochlear partition. Author.

**Radiation dose to the lens and cataract formation.** Henk, J. M., Whitelocke, R. A. F., Warrington, A. P., Bessell, E. M. Royal Marsden Hospital, London SW3 6JJ.

*International Journal of Radiation, Oncology, Biology and Physics* (1993) Vol. 25, pp. 815–820.

**PURPOSE:** To determine the radiation tolerance of the lens of the eye and the incidence of radiation-induced lens changes in patients treated by fractionated supervoltage radiation therapy for orbital tumours. **METHODS:** Forty patients treated for orbital lymphoma and pseudotumour with tumour doses of 20–40 Gy were studied. The lens was partly shielded using cylinders in most cases. The dose to the germinative zone of the lens was estimated by measurements in a tissue equivalent phantom using both film densitometry and thermoluminescent dosimetry. Ophthalmological examination was performed at six monthly intervals after treatment. **RESULTS:** The lead shield was found to reduce the dose to the germinative zone of the lens to between 36–50 per cent of the tumour dose for Cobalt beam

therapy, and to between 11–18 per cent for 5 MeV X-rays. Consequently, the lens doses were in the range 4.5–30 Gy in 10–20 fractions. Lens opacities first appeared from between three and nine years after irradiation. Impairment of visual acuity ensued in 74 per cent of the patients who developed lens opacities. The incidence of lens changes was strongly dose-related. None was seen after doses of 5 Gy or lower, whereas doses of 16.5 Gy or higher were all followed by lens opacities which impaired visual acuity. The largest number of patients received a maximum lens dose of 15 Gy; in this group the actuarial incidence of lens opacities at eight years was 57 per cent with visual impairment in 38 per cent. **CONCLUSION:** The adult lens can tolerate a total dose of 5 Gy during a fractionated course of supervoltage radiation therapy without showing any changes. Doses of 16.5 Gy or higher will almost invariably lead to visual impairment. The dose which causes a 50 per cent probability of visual impairment is approximately 15 Gy.

**Sensory impairment and quality of life in a community elderly population.** Carabellese, C., Appollonio, L., Rozzini, R., Bianchetti, A., Frisoni, G. B., Frattola, L., Trabucchi, M. Geriatric Research Group, Brescia, Italy. *Journal of American Geriatric Society* (1993) Apr, Vol. 41 (4), pp. 401–7.

**OBJECTIVE:** To determine the association between quality of life measures and sensory impairment in aged individuals living at home. **DESIGN:** Survey. **SETTING:** A community survey, carried out in the historical center of a town in Northern Italy. **PATIENTS:** 1191 non-institutionalized elders (age 70–75 years). **MEASUREMENTS:** Comprehensive QOL questionnaire, free-field voice testing, and Snellen eye chart. **RESULTS:** Single sensory impairments (either visual or auditory) were significantly and independently associated with increased risk for depression (odds ratio: 2.3, 95 per cent confidence interval: 1.5–3.4; OR: 1.8, CI: 1.1–2.7, respectively) and decreased self-sufficiency in daily living activities (OR: 1.7, CI: 1.1–2.6; OR: 2.1, CI: 1.4–3.2, respectively). Visual dysfunction, but not hearing dysfunction, was independently associated with lower social relationships (OR: 2.0, CI: 1.3–3.1). **CONCLUSION:** The quality of life of community-dwelling elderly people is significantly linked to sensory impairment, which can be detected through simple physical examination. Mood level and social relationships are particularly affected by visual impairment, whereas self-sufficiency in daily living is more strongly related to hearing impairment. Author.

**Thyroarytenoid muscle activity in sleep apneas.** Insalaco, G., Kuna, S. T., Catania, G., Marrone, O., Costanza, B. M., Bellia, V., Bonsignore, G. Istituto di Fisiopatologia Respiratoria del Consiglio Nazionale delle Ricerche, Palermo, Italy. *Journal of Applied Physiology* (1993) Feb, Vol. 74 (2), pp. 704–9.

In normal subjects the thyroarytenoid muscle (TA), a vocal cord adductor, has phasic expiratory activity during wakefulness that disappears during non-rapid-eye-movement (NREM) sleep. Fibre-optic studies have reported absent or irregular vocal cord movements during obstructive apneas and vocal cord adduction during central apneas. This study was designed to investigate TA activity during NREM sleep in 14 subjects with sleep apnea by means of intramuscular wire electrodes. During central apneas, which were recorded in three subjects, continuous TA activity was observed. During obstructive apneas, which were recorded in all subjects, two different patterns of TA activity were observed: 1) absence of any activity until arousal and 2) phasic activity throughout the apnea. The first pattern was detected in six subjects, whereas both patterns were observed in the remaining eight subjects. No correlation was found between obstructive apnea characteristics and presence or absence of TA activity. In all subjects TA underwent a marked activation during arousal. While nasal continuous positive airway pressure was applied during NREM sleep TA activity was always absent. The persistence of TA activity during central apneas suggests that they may represent an extreme prolongation of neural expiratory discharge. We speculate that a variable interaction of different stimuli acting during obstructive apnea may activate TA, which, in turn, may contribute to glottic narrowing. Author.

**Polymerase chain reaction for detection of Mycobacterium leprae in nasal swab specimens.** de Wit, M. Y., Douglas, J. T., McFadden, J., Klatzer, P. R. N. H. Swellengrebel Laboratory of Tropical Hygiene, Royal Tropical Institute, Amsterdam, The Netherlands. *Journal of Clinical Microbiology* (1993) Mar, Vol. 31 (3), pp. 502–6. The polymerase chain reaction based on the selective amplification of a 531-bp fragment of the gene encoding the proline-rich antigen of Mycobacterium leprae was applied to nasal swab specimens from

leprosy patients, occupational contacts, and endemic and non-endemic controls. To prevent false-positive amplification, we used dUTP and uracil-DNA-glycosylase in all polymerase chain reactions. False-negative reactions were detected by using a 531-bp modified template as an internal control. Amplification products were found in 55 per cent of untreated patients, in 19 per cent of the occupational contacts, in 12 per cent of endemic controls, and in none of the non-endemic controls. This study strongly suggests that not only leprosy patients but also healthy persons may carry *M. leprae*. We concluded that polymerase chain reaction is a reliable method to detect *M. leprae* in nasal specimens. The method holds promise for studying the spread and transmission of *M. leprae* within a population. Author.

**Pharmacokinetics and pharmacodynamics of ebastine in children.** Simons, F. E., Watson, W. T., Simons, K. J. Department of Pediatrics and Child Health, Faculty of Medicine, University of Manitoba, Winnipeg, Canada. *Journal of Pediatrics* (1993) Apr, Vol. 122 (4), pp. 641–6.

Ebastine is a new piperidine-containing, relatively non-sedating second-generation H<sub>1</sub>-receptor antagonist. In a double-blind, parallel-group study of a single 5 mg or 10 mg dose of ebastine syrup used to treat allergic rhinitis in 20 children aged 6 to 12 years, we tested the hypothesis that the medication would have a duration of action of at least 24 hours. We measured plasma concentrations of carebastine, the pharmacologically active metabolite of ebastine, and the wheals and flares produced by epicutaneous tests with histamine phosphate, 1.0 mg/ml. Ebastine was absorbed well; peak carebastine concentrations occurred approximately three hours after dosing. Mean plasma elimination half-life values of carebastine ranged from 10 to 14 hours. The pharmacokinetics of carebastine were linear and dose independent in the dosage range studied. After the 5 or 10 mg dose, there were no significant differences between mean plasma elimination half-life values, mean oral clearance values, or mean apparent volumes of distribution. Mean peak plasma carebastine concentrations and mean areas under the plasma carebastine concentration-time curve after the 10 mg dose were 1.93 and 1.76 times, respectively, the values obtained after the 5 mg dose. Both doses significantly reduced the histamine-induced wheal-and-flare areas for up to 28 hours compared with predose values. The differences in effect between the doses generally were not statistically or clinically significant. No adverse effects were noted. We conclude that ebastine, an effective H<sub>1</sub>-receptor antagonist with a prompt onset of action and a long duration of action, is suitable for once-daily administration to children. Author.

**Osteoarthritis, the temporomandibular joint, and Eagle's syndrome.** Barrett, A. W., Griffiths, M. J., Scully, C. University Department of Oral Medicine, Pathology, and Microbiology, Bristol, England. *Oral Surgery, Oral Medicine, Oral Pathology* (1993) Mar, Vol. 75 (3), pp. 273–5.

Temporomandibular joint osteoarthritis is common but typically asymptomatic. This article describes a patient with symptomatic left temporomandibular joint osteoarthritis in whom pain in the right side of the tongue and ear, and dysphagia, subsequently developed simulating Eagle's syndrome. The concept of Eagle's syndrome is reviewed. Author.

**Anatomic variants in sinonasal CT.** Earwaker, J. Department of Radiology, Holy Spirit Hospital, Brisbane, Australia. *Radiographics* (1993) Mar, Vol. 13 (2), pp. 381–415.

The computed tomographic scans obtained in a series of 800 patients referred for evaluation for functional endoscopic sinus surgery were examined to determine the prevalence and significance of anatomic variants. Fifty-two normal variants were identified within two major groupings of primary bony abnormalities and sinus air cell extensions. Although 743 (93 per cent) patients had one or more variants, the nature of the variants in many instances was such that 325 (41 per cent) patients could be considered 'endoscopically' normal. Among the remaining cases, variations of the septum and middle turbinates, with or without anterior ethmoid sinus extensions, were found, usually in recognizable combinations, that could produce significant obstruction of the drainage pathways. However, where such obstructive patterns existed, an equal prevalence of patients with and without sinus disease was found in the presence of the same variant combination. Thus, the presence of anatomic variations, singly or in combination, does not represent a disease state per se. Author.

**Effectiveness of acoustic reflex threshold criteria in the diagnosis of retrocochlear pathology.** Prasher, D., Cohen, M. Medical

Research Council, Human Movement and Balance Unit, National Hospital for Neurology and Neurosurgery, London, UK. *Scandinavian Audiology* (1993) Vol. 22 (1), pp. 11–8.

This study examines the acoustic reflex threshold criteria, derived from a large group of patients with cochlear hearing loss proposed by Cohen and Prasher (1992), in order to evaluate their effectiveness in differentiating between cochlear and retro-cochlear lesions. This criterion was tested on 63 patients with surgically confirmed cerebello-pontine angle (CPA) lesions. The false results obtained with this and other criteria were compared. The best balance between the false positive and negative results in the cochlear and retrocochlear group is provided by the criterion of any two adjacent test frequencies (proposed in the companion paper) having an upper limit of 105 dB for hearing below 60 dB and 110 dB for hearing over 60 dB. This study has also singled out the interaural difference criterion as the best diagnostic indicator with the lower false results with only one false negative from 63 CPA cases and three false positive cases from 61 cochlear lesions with hearing thresholds over 55 dB. Author.

**Factors to consider when in-the-canal hearing instruments are used in aural rehabilitation.** Warland, A., Tonning, F. Department of Otolaryngology/Head and Neck Surgery, Haukeland University Hospital, Bergen, Norway. *Scandinavian Audiology* (1993) Vol. 22 (1), pp. 47–55.

The purpose of this investigation was to determine what subjective factors may influence the success of fitting in-the-canal hearing instruments (ITCs). Four different types of ITC were fitted to four matched groups of 20 experienced ITC users. In addition to the subjective experiences of the users, the results were checked using insertion gain (IG) measurements. The results indicate that too sharp sound quality from paper rustle, from running water and from use of kitchen utensils is a common problem that it is important to be aware of. The possibility of maximal venting is of special importance in order to avoid autophony. Feedback may be a problem, especially when maximal venting is necessary. However, for several models of ITC, feedback is, in reality, a minor problem. High cost of batteries may be a problem for persons with ITC using 10/230 batteries. IG measurements indicated that a gain of approximately 0.3 in relation to the hearing losses was preferred. It may be advantageous to choose a model of ITC that has extensive flexibility. Author.

**ABR latency-intensity function abnormality in the early detection of a cerebellopontine angle tumour: a case study.** Thomason, J. E., Murdoch, B. E., Smyth, V., Plath, B. J. Department of Speech and Hearing, University of Queensland, Australia. *Scandinavian Audiology* (1993) Vol. 22 (1), pp. 57–9.

A case is presented of a 27-year-old male subject with a cerebellopontine angle tumour which was provisionally diagnosed on the basis of the ABR latency-intensity function findings and later confirmed by MRI. The patient initially presented with decreased hearing sensitivity, tinnitus and dizziness. The findings of neuroaudiological assessments and radiological examinations are described. The importance of the neuroradiological test battery, in particular the ABR latency-intensity function, in this case is discussed; and the need for its inclusion for earlier detection and diagnosis of cerebellopontine angle tumours emphasized. Author.

**The prevalence of perilymphatic hypertension in subjects with tinnitus: a pilot study.** Reid, A., Cottingham, C. A., Marchbanks, R. J. Audiology Department, Royal United Hospital, Bath, UK. *Scandinavian Audiology* (1993) Vol. 22 (1), pp. 61–3.

This study investigated the prevalence of perilymphatic hypertension (raised perilymphatic pressure) in a population of subjects with tinnitus. A review of the literature showed how changes in perilymphatic pressure could affect tympanic membrane displacement measurements. This review also revealed that perilymphatic hypertension was more likely to occur in young females (less than 45 years) than in other subjects. An experiment was designed to test 32 subjects, who were divided into four groups according to their age and sex. These subjects underwent several routine audiological tests and were then tested with the tympanic membrane measurement system to determine the perilymphatic pressure of both ears. Statistical analysis of the experimental results showed that the young females had raised perilymphatic pressure. This was significantly higher than the perilymphatic pressure of the other test groups and of that of a normal population. The young females also exhibited other symptoms indicative of raised perilymphatic pressure. The raised pressure was thought to be due to an increase in fluid pressure which is more likely to occur in females due to variations in the levels of circulating hormones with menstrual irregularities, pregnancy and the menopause. Author.