# Contents

InteRyc-volume 4, October, November and December, 2003

# *Jaidayal-Kanti Awasthi Institute of Strabismology*
# *&*
# *Dr. H.L. Patney Memorial Eye Clinic*

Address **in India**: 10 Bhaktinagar Society, Rajkot-360 002;
**Phone**: +91-281-2362838; FAX: +91-281-2 221399
Address **in USA**: 2701 Rain Tree Court, Columbia, MO 65201; **Phone**: +1-(573)-875-3087
**Mobile**: +1-(573)-424-9351; **E-mail**: sapatney@yahoo.com**;**
**Website**: www.geocities.com/sapatney/

*From the desk of the co-founder and the president of AISS; and co-founder director of JKAIS*

October, November and December, 2003

Dear colleague,

Greetings. In my last letter in volume 3, 03, I had written that AISS and JKAI are going ONLINE. However, so far I have not done anything without getting the members' vote of approval. In this volume there are extra questions in the Update questionnaire regarding this matter and the journal. PLEASE do answer the questionnaire this time, particularly the new questions. I would like to have a mandate before we actually do it. I intend to start the Online version by the end of 2004 or beginning of 2005. Then there is another question: whether to continue the print version of InteRyc or not. The answer depends on whether all the members have got a computer with Internet connection or not.

We repeat the list of the main incentives to go ONLINE below:

1. The work center is not confined to any one town or country. It can become global in the true sense.
2. It is much cheaper to operate, for both, the Institution and the members, because:
    a. One does not need much office-space, phone, electricity, large manpower etc.
    b. No postal or courier expenses are there, as the material is sent by e-mail/available on our website, both of which involve little expenditure compared to the conventional way of sending it.
    c. The material for teaching and the scientific matter in the books can be updated without spending large amounts of money on paper and printing etc. involved in bringing out new editions.
3. The knowledge contained therein is available to many more people, as we are not charging them any fees for accessing any part of our Website. It might have to be changed in future if need be.

*In our last letter we had announced our intention to go totally ONLINE at our Website in first half of 2003. Sorry for the mistake. It was meant to be 2004 (not 2003, as the first half 2003 was already over).*

This is a repeat request to the members not having computers and Internet, to get them. The web is a treasure chest of unlimited information about everything, not only medical. And then they can access our website too.

*Coming to routine matters*: Please inform me if you did not get InteRyc volume 3, 2003 (July, August and September issue or any other). I repeat my request to the members to please let us know of any change in their address and phone numbers. Please go to the Update questionnaire on the back of the CME quiz page and fill in the blanks. Another routine repeat request to the fellows is to please *let me know if they have not received* any of the installments of the fellowship course that had been paid for / due, even after they had sent the solved question paper back.

The fellows are strongly advised to get some hands-on experience here in the ocular motility (Orthoptic) clinic at Rajkot, at the very least one week. That is the main advantage here as I was trained as an Orthoptist also in addition to getting the training as a strabismus surgeon under Mr. (Dr.) Keith Lyle. I shall be in Rajkot from *March 15, 2004 through July 15, 2004 and then go to USA for a year* in connection with a research related to amblyopia.

Now the most important matter: Please send you due subscriptions, including that for 2004 as it becomes due on January 1, 2004. As given in the Attention column, from 2005 the annual subscription will be increased to Rs150 (instead of Rs100, that has remained the same since the revival of AISS in 1996-97) as it is not possible for me to invest money in the Institute and the Society much longer. I am sorry. Please answer this question in the questionnaire.

With regards and good wishes,

S.A. Patney

(Sudha Awasthi-Patney, MBBS, MS, FRCOphth.)

**P.S.**: Please do send me your latest email address. It is important.

## A special request to the members

*Please make prevention of strabismus and amblyopia in children your priority and make others do it too. How? By informing the public, the pediatricians, the physicians and even the ophthalmologists who are not already doing it. Create an atmosphere where everyone realizes it is of paramount importance.*

(NOTE: The following is a repeat for obvious reasons)

This is an appeal to all the members to please start a campaign for prevention of amblyopia. Actually I am of the opinion that a legislation is needed badly, that will make it compulsory that every child's eyes are thoroughly examined by the age of 1 year, so that measures can be taken to prevent amblyopia (strabismic, anisometropic and ametropic) and strabismus. If it could be done for vaccination, it can be done for eye examination also.

At present there is general indifference towards this subject. It is also obvious that pediatricians and ophthalmologists have to be trained not to advise delay in treatment because the patient is a young child / infant. It is tragic that although parents have now become aware of the need for early treatment, the pediatricians only rarely refer them to ophthalmologists who are advising them to wait until the child is 8-10 / old enough for examination. We have to advise them strongly against this practice. If we can not compel the Government to bring in legislation, we can at least alert the public, the pediatric physicians and the ophthalmologists.

It is obvious that many more Institutes of Strabismology are needed in various parts of the country. Would you, dear members, be willing to take on the task of starting a branch of this JKA Institute in your area? *Any help and advice that I am capable of providing will be forthcoming. You will need some basic instruments to start with. Orthoptic instruments are the cheapest of the lot, have you noticed*? *Please let me know at once if you are interested.*

Please try to alert the patients, parents and other relatives, the public and other physicians, particularly ophthalmologists and pediatricians about the dangers of amblyopia, strabismus and other complications if significant refractive errors are not corrected within the first years of life and if strabismus is not treated immediately.

*It is very painful to see so many cases of amblyopia.* This condition, as you know, is totally preventable if treated early, can be treated successfully, whatever the age of the patient, the younger the better. Strabismic amblyopia is more difficult to manage because of associated sensory anomalies (e.g., abnormal retinal correspondence and defective fixation. The best time to treat the patient is immediately after the start of strabismus. However, it is obvious that to prevent ametropic and anisometropic amblyopia and in many cases strabismus, the children have to be thoroughly checked at least once by the age of 1 year. The saying that prevention is better than cure is *truest* in the case of strabismus and amblyopia.

INFORMATION

1. *About the Institute (and Sitapur Eye Hospital)*

A) *The need to have a squint treatment center* and a training center for strabismologists and orthoptists in India could not be ignored anymore in *nineteen fifties*. Dr. H.L.Patney felt it most acutely as he had trained as a premedical student, medical undergraduate and postgraduate in ophthalmology in UK. He had been doing orthoptics, contact lenses and all types of surgery as a Registrar in the Ophthalmology department of the Royal Cardiff Infirmary in Cardiff, Wales, UK back in 1942-46. He had the good fortune of being the assistant of Sir Tudor Thomas and used to assist him in his private practice also. Sir Tudor Thomas was a living legend in those days and was a pioneer in keratoplasty. However, he did all types of operations including retinal detachment repair and plastic surgery. Young Dr. Patney was given lots of opportunity to operate even on Sir Thomas' private patients. Sir Thomas was a very famous and busy man and he must have had confidence in Dr. Patney's prowess in surgery as he gave him even major surgeries to do. Sir Thomas' words and signatures on Dr. Patney's old books testify to this.

In 1946 when Dr. H.L. Patney was asked by Dr. M.P. Mehrey, the founder of Sitapur Eye Hospital, to make a plan for the expansion of the hospital, he did a thorough job. He included in the plan, the name of *a squint / Orthoptic department and school* along with those of ocular pathology, instrument factory, blind school, optometry school, postgraduate institute of ophthalmology, trainee's hostels, staff's residences etc. Much later he used to say that everything in that plan materialized except a boundary wall.

Dr. Mehrey who was himself keen on keeping everything up to date in his hospital happily worked hard to realize their dreams. It took them a few years to get a first rate Orthoptic department and school.

1) The beginning was with *an Orthoptic department* in early fifties by Dr. Patney who taught a smart compounder in the hospital the basic techniques of Orthoptic examination and exercises on synoptophore.

2) *The Orthoptic School* was started in 1960 and according to plan Dr. Sudha Awasthi (who was at that time in K.G. Medical College, Lucknow) was asked to join the hospital by Dr. M.K.Mehra, (Dr. Mehrey's son). Dr. Awasthi had just passed her MS (Ophth.) from King George's Medical College, Lucknow, and was known to be especially interested in the subject. She joined Sitapur Eye Hospital and was soon after sent to London in October 1960.

3) A first rate Orthoptic department, the first in India, which was on the lines of that at Moorfields Eye Hospital (High Holborn branch where Mr. T. Keith Lyle was the Director of the Orthoptic Department), was established after she returned from London after 1 year's training under Mr. Lyle.

B. *The need for imparting training in the subject of Strabismology* (including Orthoptics), was repeatedly impressed upon Dr. Sudha Awasthi (now Patney) by another living legend of those days, Mr. T. Keith Lyle. He was in 1960 and later for many years, the Dean of Institute of Ophthalmology, London and Director and Surgeon-In-Charge of the famous Orthoptic Department of the Moorfields Eye Hospital (High Holborn branch), London. Dr. Sudha Awasthi was training under him to further her somewhat limited knowledge of the subject, already gained during the running of an Orthoptic clinic by her from 1957 to 1959 under the guidance of Prof. M.K.Mehra, a double FRCS.

Mr. Keith Lyle insisted that she should also train like an orthoptist-trainee in their Orthoptic School to gain first hand practical knowledge so that she can train orthoptists and Ophthalmologists / strabismologists with confidence. She stayed at Moorfields Eye hospital for 1 year and was then sent to Germany and Switzerland to learn first hand, pleoptics from the two pioneers (Prof. Cuppers of Giessen, W. Germany and Prof. Bangerter of St. Gallen, Switzerland,

respectively). On her return to India in 1961, the ground was ready for her to impart to the ophthalmologists and the orthoptic trainees, special training in strabismology and orthoptics. The *first Squint / Orthoptic department and Orthoptic School of India had already been started at Eye Hospital, Sitapur, which was the premier eye institution of India in fifties, sixties and seventies* (for some more information see the inside of the back page). During her days there she kept on running the squint department, training the orthoptists, DOMS candidates (as Associate Professor in the Nehru Postgraduate Institute of Ophthalmology) and visiting ophthalmologists wishing to learn the subject.

C. *The idea of starting a training institute for Strabismology* was conceived soon after Dr. H.L. and Dr. Sudha Awasthi-Patney left Sitapur and came to Rajkot.
*The center for squint treatment was being run since their arrival in Rajkot in 1972 but a formal inauguration of a training center was performed in 1983. However, due to Dr. H.L. Patney's serious and prolonged illness the plan had to be kept suspended. The Institute started functioning in real earnest since 1996 but the foundation was being strengthened by Dr. Sudha Awasthi-Patney since 1994. She took a 4.5 months study tour of USA and UK in 1994, followed by annual visits to update her knowledge in preparation for starting and running the Institute and reviving the AISS. New orthoptic instruments were bought and old ones serviced.*

*D.* As already mentioned, the Institute though inaugurated in 1983, became truly functional in 1996 along with the newly revived AISS.

*E.* At present there are only 16 members in good standing, i.e., the members who have paid up their dues until now (2003). In all there are 96 registered members. Invitation to join the society was circulated in 1996. It was repeated only once a year later in 1997.

*F.* The Institute is *running a fellowship course by correspondence*. A *diploma course* was being considered for people who find the fellowship course too hard, but so far there has not been enough demand. So far only two enquiries have been made.

*G.* *The annual contests*: Until 2001 the following contests were held. The best paper sent for the Teleconference, best poetry relating to eyes for the Eye-Rhyme contest, the best cartoon for the Cartoon-Eye contest, and the first correct answer to the Remembering Series Quiz (about past / present famous ophthalmologists connected with Strabismology). The winners received trophies and cups and a total of Rs.4350 in cash prizes every year. However, the enthusiasm of the contestants waned (not being very high for the scientific paper from the start) and we received too few entries. There was no contest in fact. If only one paper is submitted one has to give the award to the only entrant. We have therefore discontinued the contests since 2002. Prizes for year 2001 are announced in this volume. It was decided to give them despite a lack of competition, because withdrawal of the contests had not been announced then.

*H.* A free squint camp (diagnostic and surgical) has been held every year until 2002-03, usually in collaboration with the Rotary Club of Rajkot Midtown.

*I.* There is a fellowship (Rs.1000/pm) for members 35 years old or younger during their stay at Rajkot for practical experience. So far nobody has applied for it.

*2. <u>About the Society</u>*

(1) All India Strabismological Society (AISS) was *conceived and started* by Dr. H.L. Patney and Dr. Sudha Awasthi (now Patney) in 1967. The idea came to them during their participation in the founding session of the International Strabismological Association (ISA), which was held in 1966 at Giessen, W. Germany. Prof. Cuppers, one of the pioneers of pleoptics was the head of Ophthalmology at the Universitats Augenklinik (University Eye Clinic) there. Mr. Keith Lyle was the founding president and Dr. G.K. von Noorden, the founding secretary. Dr. Sudha Awasthi was one of the panelists and speaker at the ISA meeting.
One of the 4 aims of ISA is to spread the knowledge of the subject of Strabismology. The other three are given on the inside of the front cover.

(2) The founding meeting of the society was held in Calcutta in 1967 during the AIOS conference. Neither Dr. Patney nor Dr. Awasthi wished to be the President. They asked Dr. L.P.Agarwal to be the first president and he accepted. Dr. Awasthi was the founding secretary and Dr. Patney the treasurer. Many senior and well-known ophthalmologists joined the society.

(3) The first regular meeting of the society was held at Ahmedabad during the AIOS congress in 1968. At the executive committee meeting, a proposal to have the *society registered* was passed. This was done same year.
(4) The first activity of the new society was to hold a 7-days refresher course (workshop) on squint and other ocular motility disorders in September 1967 at Sitapur. It turned out to be very successful, probably because it was the first of its kind in India. Members who were mostly senior ophthalmologists attended it; some of them were quite senior /fairly well known.
(5) Every year new elections were held and the management of the society changed hands. Somewhere around 1976 the society became defunct.
*Note: Frankly speaking, I have recently realized that this is a drawback in the democratic system that a lovingly conceived and nurtured institution / organization may die a premature death if it falls into indifferent hands.*
(6) *Revival of the society* was proposed during a meeting (of old members and some other ophthalmologists), that was hastily arranged at the request of Dr. Sudha Awasthi-Patney in 1981 immediately after the conclusion of Dr. Nagpal's very successful National Symposium on squint. It was decided to revive the society during the next conference of AIOS and Dr. Sudha Awasthi-Patney was asked to be the convener and do it. New and old members gave their names to be enrolled again. Dr. Awasthi-Patney unfortunately failed to attend the next AIOS conference in 1982 due to the sudden serious illness of Dr, Patney. She requested Dr. B.T. Maskati, the Hon. Gen. Secretary of AIOS at that time to make an announcement at the conference that "Dr. Awasthi-Patney cannot make it now but she will be sending circulars for a meeting of the society to be held later at Rajkot". She never knew what happened but Dr. Prem Prakash started a new society named as "Strabismological Society of India". It is no use going into the details now.
(7) *The AISS was revived* in 1996 after a few years' inactivity. *At present there are 96 members but out of them only 17 members have paid up to 2002, 11 for 2003.*

3. *About the courses*

*Fellowship*: It is a correspondence course. Theory part is sent in 15 installments of 50-100 pages each, by conventional mail. It can also be sent by E-mail starting next year. Each installment is accompanied by a question paper. The fellow studies the matter, answers the question paper and sends it back. On receipt of the latter he/she is sent the next installment.
We intend to make the whole course go Online only, as has been done by many other institutions, but that can only happen if all the members or other fellowship hopefuls are computer literate and have email (Internet) facility.
The course fee for the theory part is (INR) Indian Rs.1500, to be paid as a demand draft issued in the name of Dr. S. A. Patney, account No. 4256, UCO Bank, Udyognagar Branch, Rajkot.
Apart from the theory part, some practical experience at our Orthoptic/Ocular Motility Clinic, Rajkot is considered advisable. It is free. The period of the practical experience is to be determined by the fellows themselves on the basis of their experience and expertise in the subject but one week is the absolute minimum even for somebody with some working knowledge of the subject. Here it must be made clear that even one month is, in my opinion not enough for a subject that is highly practical. If the strabismologists want to be their own masters (guiding the orthoptists, instead of being guided by them, which is the usual case) they have to get hands-on experience. When the fellowship candidates (fellows) attend the clinic in Rajkot they realize that actually one week is not enough even for a workshop as those who attended the September 02 workshop found out.
*However, in view of some of the fellows' genuine difficulties in arranging for absence from work and stay at Rajkot, now there is another option.* The fellow is allowed to get a testimonial after he has completed the theory part, and gone through four CDs showing ocular motility examination and strabismus surgery. After learning these from the CDs he/she has to send us back the solved question paper accompanying the CDs. The cost of 4 CDs is Rs.400 only.

*4. About the workshops / Refresher Courses*
As I shall be in USA for a whole year in connection with research on amblyopia (from August 2003), holding a workshop will not be feasible during this period. Now that we are planning to go Online we have to depend more and more on Interaction through the Web/email. I am working on a plan by

which we can discuss various types of cases and their management. Do let me know if you have any suggestions.

5. *About InteRyc, the News-Letter-Update of the society:*

*(A)* At present InteRyc is being published every three months. Previously it was coming out every two months. We have been holding a discussion through InteRyc and mail, on whether we should stop InteRyc and revive the Indian Orthoptic Journal that had been conceived by Dr. Sudha Awasthi-Patney and started with Dr. J.M. Pahwa as editor and she as joint editor, in 1963-64 at Sitapur. *On opinion poll however, most members said they would like the InteRyc to be continued.* I am sorry to say that publishing both would be impossible because of financial constraints. *However, another alternative is to keep them alive and take one or both of them online so that the members can access them on our web-site. But that will require all the members to have computers and Internet facilities. In addition, trained workers will be required to do the tremendously increased volume of typing, proof reading, attending to the extra volume of mail and other matters besides. An alternative to hiring the workers is to share the work by dividing it among us all in planning and publishing the journal. Each member of the editorial board can take charge of one subject and look after it, from getting the article from a strabismologist of his/her choice, going over it to correct any mistakes, typing it and sending it by email to the referees( if we decide to have them) for their comments and finally sending it to the chief editor for a final finish. All the articles on various topics (e.g., esotropia, amblyopia etc) can then be put together in the form of the Indian Orthoptic e-Journal by the chief editor and uploaded on to the Website from where members can access them. Alternatively, the e- journal thus put together can then be sent by email to all the members.* I WOULD LIKE TO HAVE THE YOUR ADVICE REGARDING THIS MATTER, FROM MEMBERS WHO HAVE OPTED FOR A PLACE ON THE EDITORIAL BOARD. Please do answer the extra questions in the Update Questionnaire regarding this matter.
*A request to the members of the editorial board*: Please send me the name of the subject you would prefer to deal with. I think it will be good idea if each member has one subject to study and keep up with the latest literature on. It will then be easy to solicit articles from ophthalmic community and thereafter edit it.

*(B)* I would like to have all the members' opinion on the subject of changing the journal's name. It is in a new medium anyway (online) and of course we can always mention that its precursor in print medium was called "Indian Orthoptic Journal". The new name I propose is "International Journal of Strabismus, Amblyopia and related disorders" (IJOSAR). The word "International can be taken out but I suppose there should be no objection to it by anybody. The word Amblyopia is included because it is the most recognized word on the Internet, even more than the word strabismus, so the people trying to get info on either of the two will find it easily. What do you say? PLEASE REPLY to this question also in the update questionnaire.

(C) So far InteRyc is sent free to every member of the AISS and JKAI but the present subscription for membership is insufficient and therefore I have been investing money in it. But now that I shall have to be in USA for one year in connection with research on amblyopia, I shall not be able to invest any longer. The only recourse is to go ONLINE only. That is to say that the InteRyc and the journal (if restarted), should be put on the Website so that the members can download it and print it if they like or store it on their hard disc. To be able to do all this, the basic requirement is for every member to have a computer along with an Internet connection. However, this change in the InteRyc will not be effective until sometime in 2005. What is your opinion? PLEASE MAKE IT A POINT TO REPLY TO THIS QUESTION TOO.

(D) We are starting to put old copies of InteRyc on our Website. In fact InteRyc volume 2, 2003 appeared on our Website more than a month ago in a PDF format (that can be downloaded). Please let us know if there is any difficulty in accessing or downloading it. a software called "The Acrobat Reader" is required to open the document.

*Background of the Indian Orthoptic journal:* Dr. Sudha Awasthi (Patney) was inspired greatly by her teacher Mr. T. Keith Lyle (read about him under the heading of "In fond memory" on the inside of back cover). He stressed the need of making the subject of strabismus popular among ophthalmologists and campaigning for early diagnosis in infants and children to prevent amblyopia. After she came back to Sitapur Eye Hospital in 1961from England and Europe after her training in Strabismology, Orthoptics and pleoptics she conceived the idea of bringing out an Indian Journal of Orthoptics on the lines of the British Orthoptic Journal. Dr. J.M. Pahwa (who liked the idea and agreed to look after the practical aspect) and Dr. Awasthi (Patney) started the journal in 1963 and looked after it as the editor and the joint editor respectively until her departure from Sitapur in 1972. Dr. Pahwa continued publishing it until a few years back. About 3-4 years back he asked Dr. Sudha Awasthi-Patney if she would like to take over the publishing of the journal to which she replied in the affirmative.

## ATTENTION

1. *The CME quiz-No.*4, 2003 is included in this volume. Please answer it, cut along the dotted line and send it back by conventional mail OR scan it to get it onto your computer, fill it and send it by email. The answers to the CME quiz- No.3, 2003 are also included.
2. *The questions in each quiz* are drawn from the material given in that particular issue of the InteRyc under the headings of Strabismus Summary Series, Update, InformIT and Short Review article on Strabismus etc.
3. *So far member of the year has been chosen on the basis of overall performance during that year (e.g., taking part in the contests namely Best paper, Eye-Rhyme and Cartoon-Eye, as well as answering the Remembering Series quiz and the CME Quiz. Now that the contests have been stopped, the title is to be given to the member, who correctly answers all the CME quiz installments and spot the diagnosis. Dr. S.K. Pal is the member of the year 2003. He will get a certificate to the effect and a cup.*

4. The *update questionnaire* is printed on the back of the CME quiz. *Please do answer it* if there is any change or addition in the information about phone No., FAX number, mobile phone number, pager number, E-mail address or a Website address. It is not uncommon to find them changed when I try to call the members on phone or when the email sent to them comes back. This time there are one or two new questions. It will be a great help to get the members' opinion.

*The membership subscription for year 2004* becomes due on 1st January 2004. Members, who have not paid the subscription for the year 2003 by the end of December (the final extended date) will not be sent future editions of InteRyc until their subscription is received. As soon as due subscription is received the InteRyc will be sent. This is because of financial constraints. Already we are finding it hard to keep afloat. The members, therefore, *are requested to send the subscription for 2003 and 2004 soon as the latter will become due in January 2004. Those members who have not even paid the earlier subscriptions are requested to let us know if they are interested in retaining their membership through the update questionnaire. The list of members and the subscriptions they have paid shall be given in the InteRyc volume 1, 2004.*

## Information about subscription dues:

*(a) Members who have not even paid for 2002 are requested to send three years subscription (for 2002, 2003 and 2004). It can be in the form of a demand draft for Rs.300 OR cheque for Rs.320, in the name of Dr. S.A. Patney, UCO bank. Udyognagar branch, S/B account No. 4256, Rajkot.*

*(b) Members who have paid for 2002 but not for 2003, are requested to send two years' subscription, as that for 2004 becomes due on the January 1, 2004. Please send DD for Rs.200 / cheque for Rs.220 only.*

*(c) Members who have paid up to 2003 but not for 2004, are requested to send one year subscription, as that for 2004 becomes due on the January 1, 2004. Please send a DD for Rs.100 / cheque for Rs.120 only.*

## NEWS

1. *The annual contests* have been stopped due to a lack of competition and extremely poor number of the entries.
2. *The names of the prize winners* of the year 2001 are as follows:
   *Best paper for the teleconference* (We received only two entries!): Dr. (Prof.) N.C. Singhal, N. Delhi: He will receive the Dr. H.L. Patney Trophy and a cheque for Rs.2500 along with a certificate.
   *Best rhyme relating to eyes (Eye-Rhyme)*: Dr. (Prof.) N.C. Singhal. He will receive a cup, a cheque for Rs.250 and a certificate.
   *Best Cartoon (Cartoon-Eye)*: Dr. Venugopal G. He will get a cup, a cheque for Rs.150 and a certificate.
   *Remembering Series Quiz 2001 prize*: has been won by Dr. A.K.S. Rathore. He will receive a cup, a cheque for Rs.250 and a certificate.
3. The AISS and the JKAI will probably go ONLINE totally by the end of 2004 or during 2005 if approved by the members. Do reply to the extra questions in the Update questionnaire.
   However, installments of fellowship-course will still be sent by snail mail or courier, as before, to the existing fellows. New fellows can opt for the course to be sent by email for a reduced amount.

## Welcome to the new members:

The new members who have joined the family of All India Strabismological Society (AISS) and Jai-Kanti Awasthi Institute of Strabismology (JKAIS) are requested to remember their JIM-numbers. This number should always be referred to in all the correspondence addressed to the JKAIS.

We welcome you and wish you all a fruitful association with the AISS and JKAIS.

## COMING UP

1. *10-23-2004-10-26-2004: American Academy of Ophthalmology 108th Annual Meeting and European Society of Ophthalmology (Annual Meeting) ;New Orleans, LA, USA.*
   *For information or registration*, contact the AAO, P.O. Box 7424, San Francisco, CA 94120-7424; (415) 561-8500; fax: (415) 561-8533; e-mail: meetings@aao.org.
2. *ONGOING: Axial Eye Length Biometry, Flourescein Angiography, Diagnostic B-Scan, and Visual Field Fundamentals, San Francisco, CA; contact:* Denice Barsness, CRA, COMT, ROUB, Eye Education, 2060 Sutter Street #306, San Francisco, CA 94115; Phone: (415) 921-8595; Fax: (415) 775-8826; Email: denicebars@worldnet.att.net.
3. *ONGOING: Attracting Presbyopic Patients by Incorporating Conductive Keratoplasty; Various Locations. Visit our web site for a complete list of dates and times. Attend this 2004 meeting series focusing on clinical uses and surgical techniques of conductive keratoplasty.*
   *For more information or to register,* contact: Registration Manager, CK Series at SLACK Incorporated, Tollfree: 1-877-307-5225 (US/CN only). Phone: (856) 848-1000. Fax: 1-856-251-0278.
4. *10/24/2004: Perspectives on Conductive Keratoplasty; New Orleans, LA, United States of America*

*To be held at the Wyndham New Orleans at Canal Place. For information or to register*, contact: Registration Manager, CK New Orleans at SLACK Incorporated, Tollfree: 1-877-307-5225 (US/CN only). Phone: (856) 848-1000. Fax: 1-856-251-0278. E-mail(s): meetingregistration@slackinc.com

5. *10/24/2004: Perspectives on Conductive Keratoplasty; New Orleans, LA, United States of America.* To be held at the Wyndham New Orleans at Canal Place. *For information or to register*, contact: Registration Manager, CK New Orleans at SLACK Incorporated, Tollfree: 1-877-307-5225 (US/CN only). Phone: (856) 848-1000. Fax: 1-856-251-0278. E-mail(s): meetingregistration@slackinc.com
6. *10/22/2004: Phakic IOLs: Live Surgery Symposium Using the Latest Technologies, Hilton New Orleans Riverside; New Orleans, Louisiana, USA*
*For more information or to register*, contact: Meeting Registration at SLACK Incorporated, Tollfree: 1-877-307-5225 (US/CN only). Phone: 1-856-848-1000. Fax: 1-856-251-0278. E-mail(s): meetingregistration@slackinc.com
7. *10/25/2004: Phakonit Breakfast Meet and Wet Lab at the American Academy of Ophthalmology Annual Meeting; New Orleans, Louisiana, USA. For information or to register*, contact: MicroSurgical Technology at USA Phone: 425-556-0544.
8. *ONGOING: Axial Eye Length Biometry, Flourescein Angiography, Diagnostic B-Scan, and Visual Field Fundamentals; San Francisco, California, USA. For information or to register*, contact: Denice Barsness, CRA, COMT, ROUB, EyeQ Education at 2060 Sutter Street #306, San Francisco, CA USA 94115. Phone: (415) 921-8595. Fax: (415) 775-8826. E-mail(s): denicebars@worldnet.att.net
9. *12/3/2004 - 12/4/200415th Biennial Cornea Conference: Honoring the 40th Anniversary of the Corneal Fellowship; Philadelphia, Pennsylvania, USA For information or to register*, contact: Wills Eye Hospital, Department of CME at Lucia M. Manes, Meeting Planner, USA Phone: 215-440-3168. Fax: 215-825-4732. E-mail(s): 1manes@willseye.org
10. *11/14/2004 - 11/17/2004: 10th International Orthoptic Congress - Global Perspectives Converge Downunder; Melbourne, Australia. For information or to register*, contact: Orthoptics 2004 Congress Managers, Tour Hosts Conf at G.P.O. Box 128, Sydney, AU. NSW 2001. Phone: 61-2 9248 0800. Fax: 61-2 9248 0894. E-mail(s): orthoptics.tourhosts.com.au
11. *ONGOING: Mini-fellowships in Refractive Surgery; Crete, Greece. For information or to register*, contact: Ms. Aspa Karabela at Phone: +(30) 81-392-351. Fax: +(30) 81-542-094. E-mail(s): ophadmin@med.uoc.gr
12. *ONGOING*: *A platform for interaction in Strabismology and related topics*: JKA Institute of Strabismology & Dr. H.L. Patney Memorial Eye Clinic, 10. Bhaktinagar Society, Rajkot-360 002, India, phone: +91-(281)-2362838; FAX: +91-(281)-2221399; E-Mail: sawasthi6@yahoo.com; Website: Geocities.com/sapatney/.

## STRABISMUS SUMMARY SERIES PART XXII

In this XXII part of Strabismus Summary Series the topic of "Getting familiar with Orthoptic instruments" is continued.

### Getting familiar with Orthoptic instruments: Part 8

(This series will not only deal with instruments for use in Orthoptic / ocular motility clinics / strabismologists' offices but also in those ophthalmologists' offices who are even slightly interested in diagnosing strabismus and other ocular motility disorders.

I wonder if it ever occurs to the ophthalmologists that very often they have not been able to help their patients suffering from disabling eyestrain because of their failure to diagnose the cause as a muscle imbalance. Quite often patients come to us with a heap of spectacles, none of which helps relieve their symptoms of strain. In properly selected cases of decompensated heterophoria or convergence insufficiency orthoptic exercises may produce dramatic results.)

*Introduction*

Most orthoptic instruments require the presence of binocular functions like bifoveal fusion, to give accurate results. This is particularly true of heterophoria. However, the eyes have to be dissociated. This dissociation is achieved by one of the two following methods:

1. By causing diplopia, but at the same time differentiating between the two images by altering their shapes (as in Maddox Rod Test) or by giving the two images different colors (as in Worth Four Dots Test in which red and green diplopia goggles are used).
2. By using haploscopic principle in which each eye is presented with a different object. The two fields are separated in one way or another. If binocular functions are present the two objects are seen superimposed when corresponding points are stimulated simultaneously. The examples of haplopscopic instruments are: Major Amblyoscope (e.g., Synoptophore), Maddox Wing etc.

Here we continue with the discussion of the instruments, their uses and interpretation of the findings one by one (please refer to the list of instruments that was given in InteRyc volume 4, 2001 on page 9). In the following text we are going to take up Maddox Wing. This instrument is meant for measuring heterophorias: horizontal, vertical and torsional.

**Maddox Wing**

In contrast to the Maddox Rod (see InteRyc volumes 1, 2 and 3, 2003) which is based on the diplopia principle, Maddox Wing is based on the haploscopic principle.
In the tests based on the haploscoppic principle, two different objects are presented to the patient that are perceived simultaneously and seen superimposed (if binocular functions are intact).
As already mentioned, in diplopia principle one single object is presented to the patient but it is seen by the patient as double. However, each image looks different, e.g., Worth Four Dots Test differentiates between the two images of one spot light by giving them different colors (red and green) by wearing red and green glasses and Maddox Rod changes the shape of one of the two images of the spot light into a linear one.

*Uses*: (Basically for measuring heterophorias or latent deviations of the eyes)

1. Measurement of exophoria and esophoria
2. Measurement of hyperphoria
3. Measurement of cyclophoria
4. For assessing the progress of a case that has been undergoing orthoptic treatment for decompensated heterophoria.
5. If a person can do this test, it is an indication of presence of fairly good binocular functions.

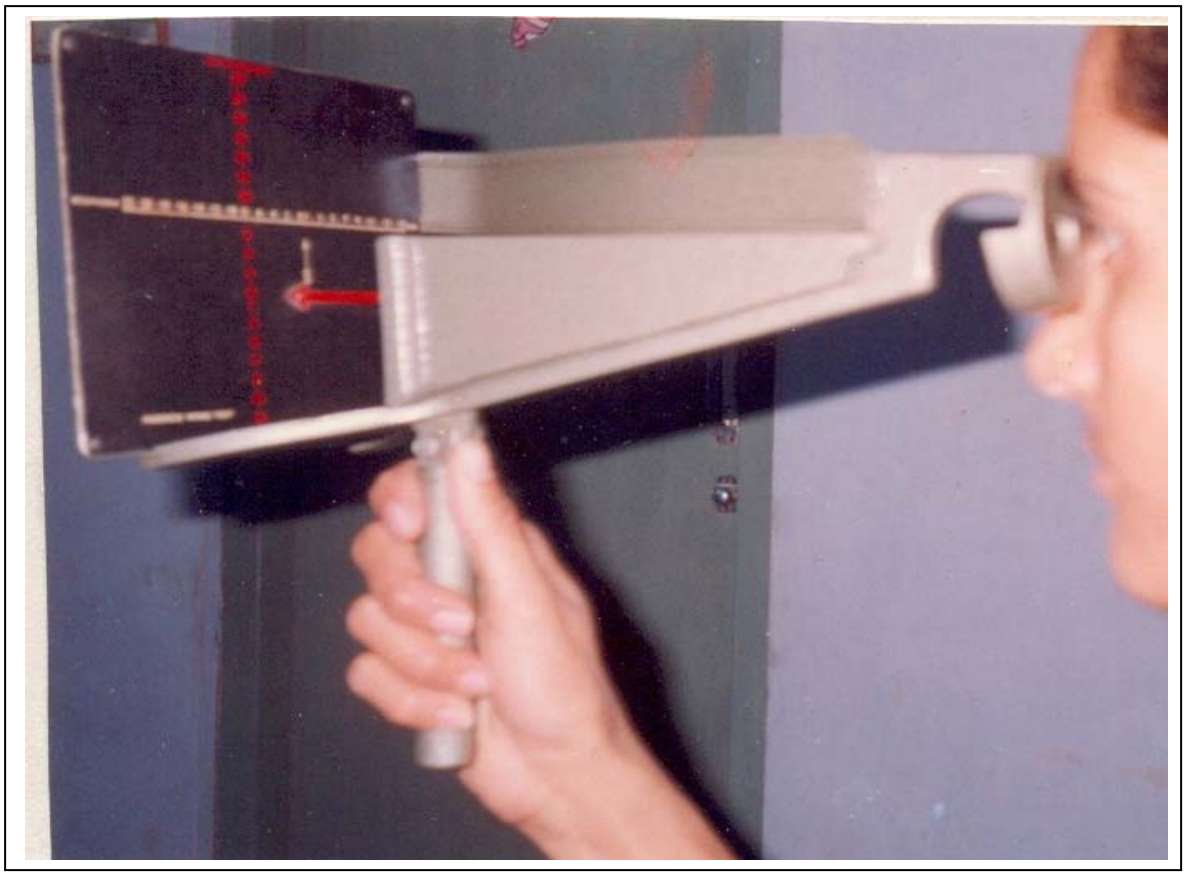
6. I FIND IT VERY USEFUL while prescribing a reading correction for presbyopia, an everyday activity in every eye clinic all over the world. It is commonly observed that a number of patients are not happy with their reading glasses. The reasons of non-acceptance of their reading correction are several, main ones being decentered optical centers and presence of heterophoria and/or convergence insufficiency. When we think we have got the correct number for reading we use a Maddox Wing to see if there is any exo or esophoria. If there is significant exophoria with glasses we reduce the power of the plus lenses just enough to keep the amount of exophoria manageable, that is, we try to keep it Exo 6 or less on the Maddox Wing scale. In patients with significant esophoria we can give a slight overcorrect to reduce the esophoria.

*Advantages*:
1) It is a simple and quick test.
2) It is extremely useful in detecting and measuring heterophorias.
3) It is an excellent screening test and is used in British Royal Air Force and Navy as it is particularly important to detect the presence of a decompensated heterophoria in professions like flying an airplane or navigating a ship. A decompensated heterophoria can cause defective stereopsis leading to misjudgment of distance and depth.
4) Use of Maddox Wing while prescribing glasses (as elaborated above) has proved extremely rewarding during the last several years we have been using it.

*Limitations*:
(1) This instrument can only be used if normal binocular single vision is present.
(2) It can measure heterophorias for near only.
(3) If a person has defective near vision, as in presbyopia the numbers can not be seen, but this difficulty can be overcome by doing the test with reading glasses or by placing the near correction / addition in the slots provided for lenses.
(4) An illiterate patient can not read the numbers. However, this problem can be easily solved by using a pen (instead of numbers) in front of the left eye that reads the numbers.

*Description of the instrument***:**
Maddox Wing consists of a black/grey rectangular board on which there are three scales calibrated in degrees (see figure): one is horizontal for horizontal heterophoria and shows numbers that are painted white; the numbers on the larger vertical scale for vertical heterophoria are painted red; and the third scale is also vertical but it is smaller and is situated at the right edge of the rectangular board. The last scale is to measure cyclophoria (torsional latent deviation). The surface of the rectangular board is divided in to four quadrants by the larger vertical scale bisecting the horizontal scale approximately in the middle. The lower right quadrant shows one small vertical white-colored arrow painted on it. It also has a large horizontal red-colored arrow attached to the right edge of the apparatus. The arrow is fixed at its base and movable at the tip. The white arrow is meant for measuring horizontal heterophoria and is seen pointing to the white numbers. The red arrow is meant for measuring vertical and torsional heterophorias.

Two extensions go backwards to join the rectangular board with the eye pieces, each of which has two slots for corrective lenses. The centrally placed extension is meant to dissociate the two fields. When the patient looks through the eyepiece he can see the arrows with the right eye and the numbers with the left eye. Looking with both eyes he is able to see both. A handle is attached to the undersurface of the instrument for a steady hold by the patient.
Maddox Wing is longer antero-posteriorly (11.5”) and shorter horizontally (6.2”). Vertically the rectangle is 5.2”.



*Method of testing***:**
This test is to be done with and without glasses, so that the effect of glasses on the heterophoria is known. It is to be kept in mind that minus lenses control the exophoria and plus lenses increase it. Similarly plus lenses control esophoria and increase exophoria. The power of the lenses worn by the patient may have to be adjusted accordingly within a certain limit, to help control the heterophoria, which is decompensated and causing symptoms of asthenopia.

The steps are as follows:
1) The patient who is sitting upright holds the instrument with the handle so that he looks slightly down at the rectangular board.

2) He is asked to tell the numbers to which the various arrows are pointing. The white numbers denoting esophoria are odd (1, 3, 5 and so on) and situated on the right side of zero. Those for exophoria are even numbers situated on the left side of "0". In the same way the board is labeled for right and left hyperphoria.
3) For getting the reading of cyclophoria the patient is asked if the horizontal white line of the horizontal scale appears parallel to the red arrow. If it does not, the body of the arrow is moved so that it appears parallel to the white line. The number on the small vertical scale to which the tail of the red arrow is pointing gives the measure of cyclophoria.

## UPDATE

Note: Update contains abstracts/short outline of the articles that are of clinical interest and that have been recently published in the scientific/medical/ophthalmic literature. The source is mostly from journals but some of them are obtained from the Internet, mostly from Medscape, OSN Super Site and Medline.

### Update-General ophthalmology

1. *Removal of lens material dropped into the vitreous cavity during cataract surgery using an optical fiber-free intravitreal surgery system (Horiguchi M; Kojima Y; Shimada Y: J Cataract Refract Surg 2003 Jul;29(7):1256-9)*: In this article authors describe a technique for removing lens fragments dropped into the vitreous cavity during cataract surgery using an optical fiber-free intravitreal surgery system (OFFISS) that was developed for bimanual vitrectomy. The dropped nucleus was removed by 2-port corneal vitrectomy using the OFFISS in 3 patients during complicated cataract surgery. CONCLUSION: No complications occurred, and good visual recovery was achieved. The OFFISS provided a good view of the fundus without fiber optics and allowed the use of 2 ports for vitrectomy through the corneal wound. This technique is suitable for cataract surgeons who have not been trained in 3-port pars plana vitrectomy.
2. *Phototherapeutic keratectomy with amniotic membrane for severe subepithelial fibrosis following excimer laser refractive surgery (Lee HK; Kim JK; Kim EK; Kim GO; Lee IS: J Cataract Refract Surg 2003 Jul;29(7):1430-5):The authors* report 2 patients who developed subepithelial opacities and myopic regression after photorefractive keratectomy (PRK) and laser-assisted subepithelial keratectomy. Both cases were treated successfully with manual debridement of the epithelium, phototherapeutic keratectomy, and PRK with amniotic membrane application.

### Update-Strabismology

1. *Strabismus following endoscopic orbital decompression for thyroid eye disease: (Roberts CJ; Murphy MF; Adams GG; Lund VJ: Strabismus 2003 Sep;11(3):163-71)* : The authors reviewed retrospectively the records of 23 patients (40 orbits) who had undergone Endoscopic orbital decompression for thyroid eye disease by a single surgeon, during about 6 years (from 1994 to 2000). They concluded that,
(1) Endoscopic orbital decompression is an effective procedure for disfiguring

proptosis; (2) Although postoperative diplopia is a common complication, preoperative diplopia may improve.

2. *Using diazepam and atropine before strabismus surgery to prevent postoperative nausea and vomiting: a randomized, controlled study. (Ozcan AA; Gunes Y; Haciyakupoglu G: J AAPOS 2003 Jun;7(3):210-2)*: The authors carried out a study on 50 children who underwent surgery for strabismus under general anesthesia. The object of the study was to evaluate the efficacy of diazepam and atropine sulfate used as premedication in preventing nausea and vomiting after strabismus surgery under general anesthesia. They *concluded* that diazepam and atropine sulfate premedication reduces the incidence of nausea and vomiting after strabismus surgery.

3. *Study on ocular torsion of V patterns strabismus (Yu X; Mai G; Yu H; Deng D; Lin X; Chen J; Wu H: Yan Ke Xue Bao 2003 Sep;19(3):160-4)*: The authors carried out a prospective study on objective cyclotorsion and the effect of surgery on it. There was a significant degree of excyclotropia preoperatively, which reduced significantly after surgery. There was bilateral inferior oblique overaction (in all patients) and excyclotropia (bilateral in 17 out of 22 patients and unilateral in 4 patients). The surgery consisted of bilateral inferior oblique myectomy accompanied by recession-resection procedure on horizontal recti for the horizontal deviation. The authors *concluded* that V-pattern strabismus is associated with objective excyclotropia which goes away after weakening the overacting inferior oblique muscles.

4. *Different levels of TIMPs and MMPs in human lateral and medial rectus muscle tissue excised from strabismic patients (Kitada M; Matsuo T; Yamane T; Hasebe S; Ohtsuki H: Strabismus 2003 Sep; 11(3):145-55*: This study was conducted in order to understand the differences in gene and protein expression between lateral and medial rectus muscles. Muscle tissue excised from strabismic patients was used for measuring the tissue inhibitor of metalloproteinases (TIMP)-1 and 2, matrix metalloproteinase (MMP)-2, and bone morphogenetic protein (BMP)-4. Analyzing the results the authors concluded that the resected tissue from the lateral and medial rectus muscles had different levels of expression of TIMP-1 and 2, MMP-2, and BMP-4. According to them these molecular differences may underlie different characteristics of the two extraocular muscles and may also influence the process of wound healing after strabismus surgery.

**InformIT**

Many people are shopping online now, even in the third world and this trend is increasing. There are instances when shoppers have had some problems after the purchase. It is only wise to take precautions. The following article had been picked up from the Microsoft.com website.

**Take a few precautions when you shop online**

Shopping online can offers lots of advantages. It's convenient to be able to shop anywhere, anytime. And comparing prices and bargains on the Internet can save you money. But while new purchasing methods are undoubtedly convenient, it's still important to exercise some good old-fashioned caution and common sense while shopping online. Whenever and wherever you shop online, follow these guidelines to help safeguard your shopping experience.

Shop at reputable online businesses

Before you provide any credit card information, make sure you're dealing with a business you can trust. Look for a phone number and a mailing address, review online shopping guides, and check for third-party seals of approval. The Better Business Bureau (BBB Online) and TRUSTe are just two of the reputable organizations that watch for online fraud.

Review the store's privacy statement

Look for the Web site's privacy statement and review it carefully before you start to shop. Many sites give you the choice of allowing or refusing to allow your personal information to be used for purposes outside of immediate transactions, such as sending you information on special offers.

Many sites ask for personal information during the registration process. Provide only the details that you think are appropriate. If a question seems too invasive, don't answer. If the merchant then prevents you from shopping on that Web site, take your business elsewhere.

Shop at stores that offer encryption

Make sure that you're shopping on a connection using SSL encryption technology to help protect your personal information. Encryption translates your personal data, like credit card numbers and other sensitive information, into something like a secret code to transmit it over the Web. This helps protect that information. You can tell that a Web site is using SSL encryption technology include if its Web address begins with *https* or a padlock or key icon appears in the status bar at the bottom of your browser window when you are on the site.

Pick secure passwords

Avoid creating passwords that are easy to guess, and don't base them on personal information such as your Social Security number, phone number, street address, birth date, or mother's maiden name. Use six or more randomly chosen capital and lowercase letters, numbers, and other symbols. Don't use the same password for more than one site or online account. This helps ensure that if a security flaw or careless operator exposes one of your passwords, it will not grant access to all of your online accounts.

Shoppers who remember to be as careful online as they are in person can avoid many of the pitfalls of ordering online and are more likely to have a pleasant, fun, and productive online shopping experience.

(The InformIT series is to be continued)

SHORT REVIEW ARTICLE ON STRABISMUS

The subject of cyclovertical deviations has been selected as the short review article in this volume 4 of the InteRyc, 2003. It is being presented as a series in two parts. The references will be given at the end of the second part in the InteRyc volume 1, 2004.

# CYCLOVERTICAL DEVIATIONS

(By S.A. Patney)

Cyclovertical deviations comprise a group, which includes cases of vertical and/or torsional (latent and manifest) strabismus. However, purely vertical deviations are a rarity. So is the presence of true comitance in cases of vertical deviations. Mostly they are associated with a certain amount of horizontal deviation. When the angle is measured in 9 cardinal directions (or diagnostic positions) of gaze, a varying degree of incomitance is usually present and on studying the results of various tests one can frequently find some indication of the presence of a paretic factor. In many cases though, this may be difficult to establish.
Lyle has given very pertinent quotes by Chavasse, at the start of each chapter in his book[1]. The one at the beginning of the chapter on vertical squint is given here, "The cyclovertical deviations have constituted, both in pathology and diagnosis, one of the most baffling of all problems which present themselves in the kaleidoscopic panorama of strabismus". It is as true today as it was when Chavasse wrote his remarkable book.

*Incidence*

The incidence of a vertical deviation in cases of horizontal strabismus seems to be quite high. The various figures given in the literature are: 43% in 457 cases of convergent strabismus[2], 50% in 79 cases of esotropia[3], 79% in 615 cases of horizontal strabismus[4] and 26% in Lyle's series of 298 cases of concomitant convergent squint.[1]

*Etiology*

The etiology depends on the type of vertical strabismus and will be discussed separately under each type.

**Classification and symptomatology (clinical picture)**

*Vertical strabismus can be classified in various ways. Two of the most commonly used classifications, one old and the other more recent, are given here, as each is useful in a different way. Purely vertical deviations are rare. Mostly they are accompanied by a varying degree of horizontal deviation.*

Earlier *classifications* of vertical deviations including that mentioned by Lyle[1] and advocated by Villaseca[5], divided the vertical deviations into the following three main types:
1. *Primary vertical squints* due to palsy of vertically acting muscles

2. *Secondary vertical squints*, as a consequence of horizontal squints
3. *Mixed cases*

*A more recent classification* is the one advocated by von Noorden[6] which is as follows:

A. Nonparalytic cyclovertical deviations

1) Concomitant Hyperdeviations
2) Dissociated vertical deviations (DVD)
3) Upshoot in adduction (Strabismus sursoadductorius)
4) Downshoot in adduction (Strabismus deorsoadductorius)

B. Vertical deviations due to mechanical factors
C. Paralytic cyclovertical deviations

*Following is the description of some of the main types of cyclovertical strabismus.*

1. *Primary vertical strabismus (type 1 of the Vellaseca's classification)*: This group consists of cases, in which the vertical deviation is the original one and the horizontal deviation, if present, comes later as a consequence to disturbance of binocular fixation and fusion. There may be a latent or a manifest deviation (intermittent or constant). It has been classified into the following 6 types:

a) *Primary vertical deviation* due to *unilateral paresis of an elevator or a depressor*:
(A) Paresis of superior oblique or superior rectus
(B) Paresis of inferior oblique or inferior rectus
*b)* Primary vertical deviation due to *unilateral paresis of both elevators or both depressors*
*c)* Primary vertical deviation due to *bilateral paresis of the same muscle of each eye*
*d) Mixed or multiple paresis*
e) Concomitant hypertropia
f) Dissociated vertical divergence (or alternating sursumduction)

2. *Secondary vertical strabismus* occurring as a consequence of horizontal heterotropia: A hyperdeviation is common in cases of esotropia as well as exotropia. There is no evidence of a vertical muscle paresis, although this fact does not rule out the possibility that vertical deviation was paretic in nature and with the passage of time the paresis has largely recovered and the deviation has become concomitant. The secondary vertical deviations have been divided into the following types by Urist[7]:

[1] Esotropia with bilateral elevation in adduction
[2] Esotropia with bilateral depression in adduction
[3] Exotropia with bilateral elevation in adduction
[4] Exotropia with bilateral depression in adduction

4.*Mixed cases* are difficult to diagnose and manage. They are uncommon. There may be various combinations as given below:

- There may be present two different types of primary vertical strabismus in the same case, e.g., dissociated vertical divergence and vertical muscle palsy.
- A secondary vertical deviation may occur as a consequence of secondary horizontal deviation, which
- Two different types of vertical muscle paresis may occur in the same case leading to various combinations of muscle sequels and secondary horizontal strabismus.

*Differential diagnosis of primary and secondary vertical strabismus is of utmost importance for planning proper line of management.* The various points which help in differentiating between them[8and 9] are enumerated in the table 1 on the next page.

The main points regarding vertical deviations are:

- The hypotropic eye is usually the fixing eye (even if it is the affected one) as most of the daily activities like eating, walking and reading etc. are carried out in depression.
- If the sound eye fixes and the affected eye is hypotropic, there is a pseudo-ptosis, which must be recognized for what it is, to avoid unwanted ptosis surgery. A simple test is all we need for differentiating between a true and pseudo-ptosis. The hypotropic eye with the ptosis is made to fix. In the case of a pseudo-ptosis due to hypotropia (and lid following the movement of the eye), the ptosis disappears when the eye is placed in primary position.
- It should be remembered that the affected eye is not always the deviating eye and that the muscle with dysfunction is not necessarily the paretic muscle. On the contrary, it is often the ipsilateral antagonist or the contralateral synergist[10]. The side of the fixing eye will determine whether it is to be the former or the latter.
- According to the first of *The Four Golden Rules* mentioned by Pratt- Johnson[11], in every case of vertical strabismus, *superior oblique palsy is the cause unless proved otherwise.* The other three follow in the following text.
- *A paralysis of superior oblique (SO) is congenital unless proved otherwise.* A congenital palsy may not cause symptoms until much later, usually middle age. However, a compensatory head posture (CHP) is usually adopted to achieve binocular single vision in straight-ahead position. Childhood photographs showing the presence of a CHP consistent with the type of the paralysis or paresis can provide the best evidence of a congenital palsy, in the absence of a history of double vision or squint. Sometimes there is a history of intermittent diplopia for years. When the deviation

decompensates, the diplopia becomes more frequent or there are symptoms of strain during the use of the eyes.

**Table 1, comparison between** Primary and secondary vertical deviations

| Primary vertical deviations | Secondary vertical deviations |
|---|---|
| 1. The angle of squint is larger | 1. The angle is smaller |
| 2. Significant squint in PP | 2. Insignificant or absent |
| 3.Angle increases in one of the oblique directions depending on the vertically acting muscle affected. | 3. Mainly present in lateroversion (lateral gaze). |
| 4.Horizontal angle does not vary in PP, elevation or depression. | 4. Horizontal deviation may vary increasing in elevation or depression. |
| 5.A paretic vertical squint usually shows some limitation of ocular motility. | 5.Function of vertically acting muscles is normal. |
| 6. Bielschowsky's sign is + in SO palsy | 6. The sign is negative. |
| 7. CHP, especially head tilt is an indication of primary vertical squint. | 7. Head tilt is absent unless adopted for esophoria or exophoria |
| 8. The eye with congenital ocular palsy retains some function and vision | 8. Amblyopia and suppression is common in unilateral congenital ET. |
| 9. A vertical deviation in the fixing eye is usually primary. | 9. A secondary vertical deviation is present in eye with horizontal squint |
| 10. A marked elevation in adduction indicates primary vertical deviation. | 10. In secondary vertical deviation elevation in adduction is less marked. |
| 11. It is more marked in oblique gaze. | 11. It is more pronounced in extreme horizontal gaze. |
| 12. A marked upshoot in adduction usually means SO palsy unless proved otherwise | 12. The secondary upshoot in adduction is usually mild, found in a case of long standing esotropia. |
| 13. Other neurological disturbances like nystagmus and alternating hyperphoria (DVD) normally absent | 13. Other neurological disturbances like nystagmus and DVD much more likely to be present. |
| 14. Presence of cyclodeviation likely | 14. Cyclodeviation normally absent |
| 15. Surgery on horizontal muscles does not abolish the vertical deviation. | 15. Correction of horizontal squint often abolishes the vertical deviation, if no contractures present. |

- *The second commonest cause of SO palsy after congenital, is trauma, usually a head injury.* The head injury need not be serious involving loss of consciousness.

- *If the SO palsy is not congenital (compensated or otherwise) or traumatic, a neurological cause including an intracranial lesion must be excluded.*

- It is necessary to do a full ocular motility workout in every case of vertical deviations, even if it seems to be concomitant and secondary. Many a times the seemingly secondary deviation turns out to be a primary one. For instance, a case of alternating esotropia with mild bilateral upshoot in adduction would appear to be a case of primary esotropia (especially in a child) with a secondary bilateral inferior oblique overaction. After a full orthoptic check however, the Maddox chart (a chart showing the angle of deviation in 9 diagnostic positions of gaze) may reveal a bilateral superior oblique paresis indicated by an increase of the vertical component in oblique directions and/or a presence of cyclodeviation. If it is a superior oblique palsy the vertical deviation is maximum in contralaterodepression (depression of the eye in opposite direction), the field of action of the superior oblique.

- Any surgery to correct the deviation must include vertical muscles if it is a primary vertical deviation. Secondary vertical deviations do not need correction unless there

are contractures. Commonly, correction of horizontal strabismus leads to the disappearance of the secondary vertical deviation.

- It is not an uncommon experience in a case of horizontal heterotropia with unilateral vertical deviation (e.g., an upshoot in adduction) *to have a vertical deviation (the upshoot in adduction) appear in the other eye after surgical correction.* This may be due to the following factors:

  - The pre-existing vertical deviation in the unoperated eye could have been missed/*masked.*

  - The masking of a vertical element may be explained in the following way: A vertical deviation caused by vertical rectus dysfunction is more marked in abduction and that caused by an oblique in adduction. Thus, a vertical element due to oblique overaction is more likely to occur in esotropia and may be masked in exotropia. When the exotropia without evident vertical deviation is overcorrected leading to consecutive esotropia, the preoperative masked vertical deviation due to oblique overaction may appear. Conversely, a masked preoperative vertical deviation due to vertical muscle dysfunction in esotropia may appear after it has been converted into exotropia by surgery (consecutive exotropia).

  - The other view that a vertically misplaced reattachment of horizontal muscles in the operated eye might have caused it does not seem to hold true. To cause a significant vertical deviation the vertical displacement of the re-insertion of the operated muscle has to be significant too[12].

  - It might be a case of dissociated vertical deviation (DVD) or alternating sursumduction in which the vertical element in the unoperated eye was much less as compared to the operated eye.

*A. Nonparalytic cyclovertical deviations according to Noorden's classification*

Each of the following four conditions will be discussed in short.

***1) Concomitant hypertropia or hyperdeviations***

**Incidence**

Truly concomitant hypertropia (hyperdeviation with the same angle in all the directions of gaze as well as each eye fixing) is a very rare condition. Usually there is some amount of incomitance to be found in one direction of the gaze or the other. One must examine repeatedly to make sure.

**Etiology**

The cause of the small concomitant hyperdeviation which is all there is to be found in these cases, is not known. Some of the possible explanations are mentioned below:

1. To start with, there might have been a paretic vertical strabismus, which partially recovered and developed comitance as the time went by, as is the rule in cases of paralytic strabismus.
2. Minor anatomic anomalies may be present causing an anomalous position of rest.
3. In yet other cases abnormal innervation may be responsible.
4. An abnormal position of rest may have been caused by the presence of some minor mechanical factors.

**Management of concomitant hypertropia**

In many cases without symptoms or complications no treatment is required. Sometimes when the condition is giving rise to symptoms of strain or other problems the following modalities of therapy may be considered:

(1) As the degree of deviation is small and the strabismus is concomitant, prismotherapy is usually sufficient to relieve the symptoms. *The minimum power of the prism that controls diplopia is prescribed,* distributed *equally between the two eyes. The apex of the prism is placed in the direction of the vertical deviation, which means apex up (described as base down) for hypertropia and apex down (described as base up) for hypotropia.*

(2) *Surgery* may be required in some cases to correct a co-existing horizontal deviation. There is no need to operate on the vertical muscles. The small amount of the vertical deviation can be managed by vertical transposition of the horizontal muscles (while they are being recessed or resected) as follows:

   (a) For hypertropia: The insertions of the horizontal muscles are shifted downwards so that a depression action is added to their horizontal action.
   (b) For hypotropia: The insertions of the horizontal muscles are moved upwards to add an elevation action to their horizontal one.

## ***2) Dissociated Vertical Deviations***

Bielschowsky first published a detailed account of this interesting and intriguing condition in 1896 although it had been known since 1894.

**Definition**

Dissociated vertical deviation is a name given to a special group of cases where the main diagnostic feature is a spontaneous or precipitated (by disruption of fusion) supraduction of either eye. It can be accompanied by excycloduction (of the deviated eye), abduction (of the deviated eye) and nystagmus. Any or all these features may be present.

## Terminology - Alternative names

*This condition has been given various names by different workers but it should not cause confusion, as the main signs of DVD are fairly typical. It is always the nonfixating eye that deviates upwards. When it is made to fixate the object the other eye deviates upwards. Some of the other names are as follows:*

Alternating sursumduction, alternating hyperphoria or hypertropia, double hypertropia, occlusion hyperphoria or hypertropia, dissociated double hypertropia, dissociated alternating hyperphoria or hypertropia, dissociated vertical divergence and anatopia.

Most of these names do not carry the correct impression about the clinical characteristics of the condition. The terms “hyperdeviation, hyperphoria and hypertropia” should only be reserved for cases in which one (the hypertropic) eye deviates up and the other (hypotropic) eye deviates downwards when it is not fixating. In the case of DVD each eye takes turn to deviate up and it is always the nonfixating eye that deviates up. No hypotropia can be demonstrated. As already mentioned the condition can be unilateral or bilateral. Sometimes the hyperdeviation is manifest and constant in one eye and latent or intermittently manifest in the other eye. This is specially so when there is an accompanying horizontal heterotropia (esotropia or exotropia).

## Etiology

The etiology of this condition is not clear but the results of various studies including those of the upward movement of the deviating eye and the movement of redress with the search coil method and also the studies of saccade point the finger to an *abnormal vertical vergence system*. The saccades have been found to be abnormal.

Because of the uncertainty about the causative mechanism many theories have been put forward, none of them having gained universal acceptance. The theories with the maximum support are the following:

1. Bielschowsky’ s theory
2. Spielmann’s theory

1. *Bielschowsky’s theory*

This theory tries to explain most of the signs observed in the cases of DVD. According to this theory the dissociated vertical deviations are caused by alternating and intermittent excitation of both subcortical centers that govern the vertical divergence. To support the theory Bielschowsky presents the examples of seasaw nystagmus and skew deviation. The main points of this theory are as follows:

- DVD results from alternating and intermittent excitation of both subcortical centers. These centers are concerned with controlling the vertical divergence.
- In the usual heterophoria and heterotropia the innervational association between the two eyes is maintained while in DVD it is intermittently suspended so that certain movements of each eye can take place independently of the other eye.

- The unilateral cases, according to him, may result when the voluntary fixation reflex coexists with the involuntary action of one of the centers for vertical divergence.
- The fixating eye maintains primary position because the voluntary innervation to the depressors neutralizes the innervation to the elevators, which causes the updeviation.
- Bielschowsky demonstrated that when a neutral filter is held in front of one of the eyes to reduce the input to that eye progressively (by increasing the density of the neutral filter) the innervation to the elevators of this eye is abnormally increased. This is brought about by the increased effort to maintain fixation. When the innervation to the elevators is increased and the eye keeps on fixating there is a compensatory increase in the innervation to the depressors. As already mentioned, this is known as *Bielschowsky's phenomenon.* This is not the only instance of simultaneous innervation of the antagonists, the other being seen during asymmetric convergence.
- It is almost certain that the impulse for the DVD to occur arises in the fixating eye. However, the site where this impulse for innervation to the elevators starts is not known.
- It is important to understand the basic nature and the difference between the two conditions, i.e., the DVD, which is innervational in origin and the hyperdeviations, which are caused by anomalous position of rest. Both, Bielschowsky and Spielmann have stressed this point.
- Although elevation (updeviation) of the nonfixing eye is the most common feature, excycloduction and abduction (divergence) of the nonfixing eye are common, especially the former.

2. *Spielmann's theory*

Spielmann put forward the view that DVD is caused by *an imbalance in the binocular stimulation.* This view may get support by the fact that DVD is pretty common in cases of infantile esotropia but it does not explain the occurrence of DVD in the patients with normal binocular functions.
Spielmann has supported Bielschowsky view that the impulse for the innervation to the elevators of the updeviating eye must originate in the fixating eye. In fact he proved it by showing that no updeviation of either eye is to be seen if fixation is prevented by interposing neutral filters in front of both eyes. When the filter is used in front of one eye only the characteristic elevation of the nonfixating eye is seen. *This goes to show that in the case of DVD the fixation is the determining factor while in the case of heterophoria (hyperphoria) it is the fusion. When the fusion is prevented or disrupted the deviation is manifested (as the eye takes on the position of rest). As far as DVD is concerned the fusion is not the determining factor as this condition is also seen in the patients who do not have fusion.*

**Symptomatology and diagnosis**

Main clinical features of this condition are as follows:

1. Each eye deviates upwards [figure 1(a) and (b)] while the other eye is fixing and this may happen under the following circumstances:
   (1) When the patient is lost in thought or is daydreaming.
   (2) When the patient is tired or fatigued out.
   (3) When fusion is broken by some means like covering one eye as during a cover test.
   (4) When the input to the eye is reduced by interposing a neutral density filter in front of it.
2. Under the cover the updeviated eye may make vertical pendular movements [figure 1(c)].
3. When the cover is removed we see the updeviated eye moving downwards to take up fixation in the primary position. Usually this happens spontaneously [figure 1(d)] when the cover is removed but sometimes this movement of redress is not spontaneous but has to be induced by covering the other (fixing) eye [figure 1(e)].
4. On prolonged occlusion and/or dissociation the degree of deviation goes on increasing.
5. The amount of updeviation is often asymmetrical.
6. Under cover, excycloduction of the updeviated eye is common [figure 1(f)].
7. When the cover is removed the eye is seen to cruise downwards, incycloduct and often move medially or laterally (depending on whether there is an accompanying divergent or convergent deviation, respectively) to take up fixation in the primary position. *The cycloduction can be detected by looking at the conjunctival blood vessels and the iris pattern.*

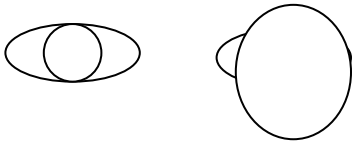
**Figure 1**(a), FR: LXT LHT

**Figure 1**(b), FL: RXT RHT

**Legend:**
RXT= Right exotropia; RHT= Right hypertropia; LXT= Left exotropia;
FR= fixing right eye; FL= fixing left eye
LHT= left hypertropia

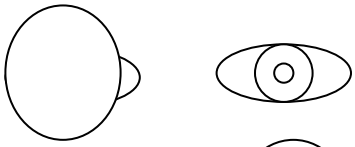
**Figures 1**(c) **– 1**(f), in reference to the text

Pendular vertical movements under cover, OS, 1(c)

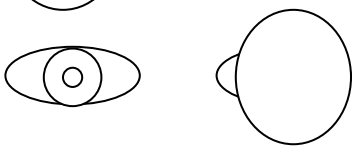


Spontaneous recovery on removing cover, 1(d)

Recovery, only on covering OD, fixing eye, 1(e)



Excycloduction of covered eye, 1(f)



8. *Latent nystagmus* is often present in cases of dissociated vertical deviations (DVD).
9. Sometimes *excycloduction of the updeviated eye is accompanied by an incycloduction of the opposite eye.* Thus if the right eye is, for the moment, updeviated and excycloducted, there is may be seen a simultaneous incycloduction of the left eye, the

result being a cycloversion to the right (upper end of the vertical corneal meridian in both eyes moving to the right).

*10.* In occasional cases there is only a torsional deviation to be seen without any vertical or horizontal elements. The excycloduction may be manifest or latent (under cover only). During the recovery to primary position an incycloduction is seen to occur. These cases are referred to as dissociated torsional deviation (DTD).

**Figure 2**(a)-(d)

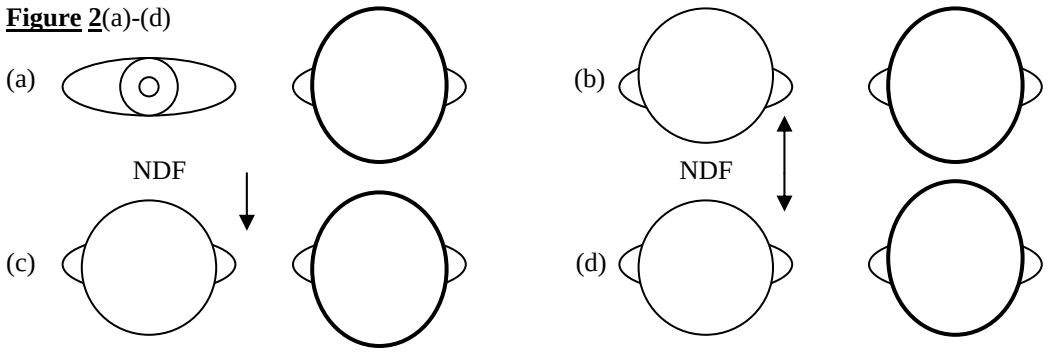



Figure 2, Bielschowsky's phenomenon (diagrammatic):

(a) OS updeviated under cover; (b) Neutral density filter in front of OD, downward movement of OS behind the cover. (c) Neutral density filter in front of OD, OS overshoots the primary position while moving down. (d) Filter with less density used on OD, OS moves up again.
Note: The ovals with thick black outlines are occluders and rounds with thin black lines are neutral density filters.

*11.* In some patient one eye may have the full syndrome while the other only the DTD.

*12.* In some cases overaction of either the inferior oblique or the superior oblique is found. In the latter case A pattern may be present.

*13.* Latent nystagmus is present in 50% of cases. (NOTE: Latent nystagmus and excycloduction were not included in Bielschowsky's origin description of this disease. Noorden advises use of the term "syndrome" for DVD.

*14.* Bielschowsky's phenomenon: In cases of DVD when one eye is covered, e.g., OS, it deviates upwards under the cover [figure 2(a)]. If, then a neutral density filter is interposed in front of the fixing eye [OD in figure 2(b)] while the other is covered and updeviated under that cover, the latter moves downwards. It may even overshoot the mark and go down beyond the primary position mark [figure 2(c)]. When the density of the neutral filter is reduced resulting in an increase in the visual input to the fixing eye, the eye behind the cover is seen to gradually move up again [figure 2(d)].

*15.* DVD is mostly bilateral but asymmetrical.

*16.* DVD is mostly associated with esotropia or exotropia although there are some cases in which it is the only sign present. In such patients the binocular functions are normal.

*17.* In cases of infantile strabismus (esotropia and exotropia) the incidence of DVD is high although it may not be evident under the age of 2 years or later. Sometimes the

DVD in such cases manifests for the first time after the surgery for horizontal heterotropia has been carried out or it may take years even after the surgery.

*18.* DVD has also been reported in association with Duane's retraction syndrome[15]. The relationship is not clear. It may be coincidental.

*19.* Suppression occurs commonly if the DVD manifests spontaneously. In such cases diplopia is rare. However, use of a red filter can manifest diplopia.

*20.* Measurement of angle of deviation can be done by any of the method using alternate cover test e.g., on the synoptophore or with the prism bars.

*21.* The diplopia test using the red filter: The red image is always seen (by the patient) below the white one, whichever eye is fixing, indicating that it belongs to the hypertropic eye. Each eye thus is shown to be hypertropic in turn (alternating sursumduction). This feature coupled with an absence of vertical muscle palsy is diagnostic of DVD. *Moreover, this test can also give an idea not only of the magnitude of the updeviation but also help in measuring it* by interposing the appropriate prisms to neutralize the separation between the two images.

Differential diagnosis

The main differentiating points are given below in table 2.

Table 2,

| Bilateral inferior oblique overaction | Dissociated vertical deviations |
|---|---|
| 1. Updeviation or upshoot in adduction, never in abduction<br>2. V pattern is often present<br>3. SO action normal<br>4. A pattern exodeviation in downgaze may be present<br>5. Pseudoparesis of contralateral SR +<br>6. Incycloduction absent on refixation<br>7. Latent nystagmus absent<br>8. Bielschowsky's phenomenon absent<br>9. Saccadic velocity of refixation move 200-400 deg/sec. | 1. Updeviation from PP, adduction or Abduction<br>2. V pattern absent<br>3. SO may overact<br>4. A pattern absent unless DVD is associated With IO overaction<br>5. Absent<br>6. Incycloduction present on refixation often present<br>7. Bielschowsky's phenomenon usually present<br>8. Saccadic velocity of refixation movement:<br>9. 10-200 deg/sec. |

DVD has to be differentiated from hyperphoria and hypertropia. This does not pose much difficulty as the other eye shows hypodeviation. The main difficulty arises when there is a case with bilateral overaction of inferior oblique muscles. These cases can be confused with those of dissociated vertical deviations (DVD) although a little attention to pertinent points can prevent it.

(Continued in InteRyc volume 1, 2005)

RATE YOUR PERFORMANCE YOURSELF

It is regretted that the questions in CME quiz no.3 were repetitions of those in the CME quiz No.2, 2003.

SPOT THE DIAGNOSIS No.3, 2003

**Correct answer**: Dissociated Vertical Deviation (DVD)

CARTOON-EYE & EYE-RHYME

These columns will be continued in InteRyc volume 1, 2004

SPOT THE DIAGNOSIS No.4, 2003

Case history: A four month old baby girl came to our clinic with severe congenital nystagmus. The parents were advised to bring her back for check up after two months, particularly for refraction. They did not turn up until the infant was 11 months old. The reason they brought her this time was the presence of a large esotropia that had replaced nystagmus!

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Please do not cut this page out. **Just send your answer** (diagnosis) by email or conventional mail (post) mentioning your name, JIM No., address, phone number, mobile No., pager No., and email address.

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**Diagnosis**:
Name:
JKA membership number: JIM-
Address:

Phone No.: Mobile No.:

Email address (very important):

**HISTORY-A FEW FIRSTS IN STRABISMOLOGY**

**Worldwide**

(a) Chevalier John Taylor (1703-1772) who performed a successful operation on a boy did first surgery for squint. He was half surgeon and half quack. He must have realized that squint was a disturbance of muscular equilibrium and conceived the idea that dividing a muscle or a nerve can cure it. However, he earned a bad name through many failures, one of them being on the eyes of Bach, the famous musician.
(b) In 1743 George L. Buffon recognized amblyopia and recommended occlusion for it.
(c) In 1839 Johann F. Dieffenbach performed the first successful tenotomy.
(d) du Bois-Reymond (1952) and Mackenzie (1954) were the first to suggest orthoptic treatment but it was elaborated and established as a technique by Javal (1864-96).
(e) Prof. A. Bangerter of Switzerland and Prof. C. W. Cuppers of Germany first advocated pleoptic treatment for amblyopia. However, their approach was different.

(Continued overleaf on page 30)

**CME (Member of the year) Quiz no.4, 2003:**

(NOTE: Please encircle the appropriate number or letter, fill in the blanks or describe as required. Then cut along the dotted line and return by mail. Turn over for the update-questionnaire)

*(1) Circle the correct answer/ answers*:

1. Maddox Wing is based on: The principle of diplopia / The haploscopic principle
2. It is a: Therapeutic instrument / Diagnostic instrument
3. It can be used as a screening tool: Yes / No
4. It can help in prescribing glasses: Yes / No

*(2) Circle the correct answer:*

1. Medial and lateral rectus muscles have different gene and protein expressions: Yes / No
2. V-pattern exotropia is accompanied by excyclotropia if there is IO overaction: Yes / No
3. Diazepam with atropine given preoperatively reduces incidence of postop. vomiting: Yes / No
4. The incidence of vertical deviations in cases of horizontal heterotropia is low: Yes / No

*(3) Name the different types of nonparalytic cyclovertical deviations:*

1. .
2. .
3. .
4. .

*(4) What are the three most common causes of superior oblique palsy?:*

1. .
2. .
3. .

*(5) Is it true or false? (Please circle the correct answer)* :

1. .DVD can occur in cases of Duane syndrome: True / False
2. .V-pattern is absent in DVD: True / False
3. .Upshoot in DVD can be present in PP, adduction or abduction: True / False
4. .Latent nystagmus is never present in cases of DVD: True / False
5. .DVD is mostly bilateral and symmetrical: True / False

**HISTORY-A FEW FIRSTS IN STRABISMOLOGY**

**In India**

(Continued from previous page)

(A) Dr.H.L.Patney started running an orthoptic clinic with the help of a compounder at Sitapur Eye Hospital whom he taught orthoptic exercises, in early nineteen fifties.
(B) Dr. M.K. Mehra and Dr. Sudha Awasthi (now Patney) started the first Orthoptic clinic at K.G. Medical College, Lucknow in 1957. She ran it for 2 ½ years.
(C) Dr. H.L. Patney started the first Orthoptic Department and the first Orthoptic School of India at Eye hospital, Sitapur, U.P. in 1959 and Dr. Awasthi (now Patney) Pleoptic dept. in 1961.
(D) Dr.Sudha Awasthi and Dr. J.M. Pahwa started the first Indian Orthoptic Journal in 1964.
(E) Dr. H.L.Patney and Dr. Sudha Awasthi started the All India Strabismological Society in 1967 and held India's first workshop on strabismus in 1967.

***Please answer the questions or encircle the correct answers, cut along the dotted line and send by return mail)***

**Update questionnaire**

1. I have been receiving InteRyc regularly, sent 2 monthly since 1998 (6 volumes per year) and 3 monthly (4 volumes per year since 1999): Yes / No
2. My email address: My Web-site address:
3. My phone No.: My FAX No.:
4. My pager No.: My mobile phone No.:
5. The name of my website is: ……
6. I am enclosing herewith a demand draft for Rs100 / *cheque* for Rs120 (year 2004 subscription) / DD for Rs200 or *cheque* for Rs220 (for the years 2003+2004) / DD for Rs 300 or *cheque* for Rs320 for 2002+2003+2004.
7. I would like to resign from the membership of AISS and JKAIS: Yes / No
   If answer is yes, please write the reason if you don't mind. It may help to improve our system.
8. My membership No.is: JIM-
9. My surname and present address are unchanged / given below:

***For fellowship candidates only*:**

10. I have paid for …….. installments.
11. I have received ……..Installments.
12. I have sent back solved question papers of ……. installments.
13. I have the following problems with the course (please attach a sheet if required):

14. I have paid membership subscription up to 02 / 03 / 04

***<u>About the revival of the Indian Orthoptic Journal as an electronic journal</u>***

15. Should the membership subscription be increased to Rs150 ?: Yes / No
16. The InteRyc and Indian Journal of Orthoptics should be converted into an online publication / sent by email: Yes / No
17. Should we continue the print version of InteRyc: Yes / No
18. I would like to help out as an editor: Yes / No
19. The name of the Indian Orthoptic Journal, when restarted, should be changed to International Journal of Strabismus, Amblyopia and Related Disorders (IJOSARD): Yes / No (suggest an alternative).
20. Would you advise the journal to be refereed ?: Yes / No
21. Which subject would you like to have charge of as an editor? Please name one:……

(NOTE: You can attach an extra sheet of paper if you would like to elaborate your answer).