

Is a Routine Eye Check-up Necessary? (The Eye - a Window to Our Health)

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Introduction

While we, the authors of this article, cannot be always sure whether "the eyes are the window to the soul" in every human being, we are a hundred percent sure that the eyes are a window to one's health. This is true because a routine eye examination may at times reveal medical conditions not obvious elsewhere; because the first signs of disease may, at times appear in the eye. Right from birth, till almost the last breath of life, a comprehensive eye check-up may clinch a systemic diagnosis, corroborate a particular diagnosis, help in differential diagnosis, assist in management or be useful in prognosticating a systemic condition. This holds true for all clinical specialties / super-specialties of medicine.

WHAT IS UNIQUE IN THE EYE?

The eye is unique in the sense that it is made up of collagen (sclera), blood vessels (choroid) and nervous tissue (retina with its own blood supply) and have the optic nerve (which literally is an extension of the central nervous system); thus making the eye the only place in the body where a doctor can have an unobstructed view of blood vessels, nerves and connective tissue - without the need for surgery. This

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mandates an eye checkup to be an essential part of a routine health checkup.

SO, IS AN EYE EXAMINATION NECESSARY FROM OTHER SYSTEM'S POINT OF VIEW?

A very intricate communication between the eye and the rest of the body makes the eye at times reflect illnesses that begins in other organs far away from the eyes themselves. From looking out for very routine signs like pallor (seen in anaemia) and icterus (seen in jaundice) to the "leopard skin" pigmentation of the retina seen in a lymphoma; an eye examination can go a long way to assist not only the general physician, but also clinicians of various specialties and super-specialties treat their patients better.

From general medicine point of view, an eye examination can reveal apart from, as mentioned above pallor (signifying anaemia) or icterus (signifying jaundice); signs of other ailments like Bitot's spots (Vitamin A deficiency) pointing towards an overall Protein Energy malnutrition with micronutrient deficiencies common among preschool children. Several signs such as Phlyctenular Conjunctivitis, Nodular Scleritis, Sclerokeratitis, Granulomatous Uveitis, Retinal Periphlebitis and Optic Nerve Head Granulomas may at times point towards Tuberculosis making an eye examination essential from the **Chest Physician's point of view**.

From a Nephrologist's point of view; characteristic retinal changes like micro-aneurysms, dot-blot haemorrhages, cotton wool spots, new vessels and vitreous bleeds signify increasing affection of the retina by diabetes and although in general reflect the affection of the entire body by raised blood sugars; more specifically they point towards affection of the kidneys by diabetic nephropathy. Similarly, characteristic retinal changes like generalised or focal arteriolar attenuation, arteriovenous changes, copper wiring of the arterioles and cotton wool spots reflect the affection of the vessels of the entire body by raised blood pressure in general, but more specifically point towards affection of the kidneys by hypertensive renal disease. Thus, a good retinal examination in a case of Chronic Kidney Disease can point towards the contribution in proportions of hypertension and diabetes towards nephropathy; both the kidneys and the eyes being "end organs".

From a Cardiovascular point of view, in cases of sudden high blood pressure, peripapillary retinal nerve fibre layer oedema and optic nerve hyperaemia or oedema signify an accelerated hypertensive change in the body. Further to very simplistically put; Retinal Vascular Occlusions generally signify among other causes mainly affection by hypertension (in case of venular occlusions) and atherosclerosis (in case of arterial occlusions). Indeed, at times; an unsuspecting asymptomatic individual may become aware of a carotid artery disease only when an eye examination

shows a remnant of a cholesterol plaque in the very small vessels of retina. Similarly, the white centred retinal haemorrhages called Roth Spots are features of anaemia, leukaemia and bacterial endocarditis. Xanthelasma and Arcus in the young signify hyperlipidaemia, an important risk factor for myocardial infarction. An ophthalmologist, at times is faced with an innocuous Red Eye in the form of an episcleritis or the more serious scleritis or uveitis which at times may signify **from a Rheumatologist's point of view,** a "limited" Collagen Vascular Disease which if not adequately controlled and nipped in the bud would "evolve" and transform into a "systemic" disease. Autoimmune diseases like Rheumatoid Arthritis, Systemic Lupus Erythematosus, Granulomatosis with Polyangiitis, Sarcoidosis, Polyarteritis Nodosa and Systemic Sclerosis all have very specific ocular manifestations mandating an ophthalmic examination in autoimmune diseases. **From the Endocrinologist's point of view,** the concept of Euthyroid Thyroid Eye Disease is important as that would put an endocrinologist on the lookout for altered thyroid levels in individuals with normal thyroid levels but with signs of thyroid eye disease like proptosis, periorbital fullness and inflammation. **From an Infectious Diseases Specialist's point of view,** a thorough examination of eye can bring out among others Choroid Tubercles, Syphilitic Periarteritis, Cytomegalovirus Retinitis which may often lead to diagnosis in dilemmas. A Primary Intraocular Lymphoma heralds a Central Nervous

System affection by Lymphoma and indeed from an **Oncologist's point of view** distant tumours like primaries in the testis may be found out by choroidal secondaries with decrease of vision being the presenting symptom. **From a Neurologist's point of view**, arteriovenous crossing changes seen in the retinal vasculature point towards an increased risk of stroke or similar events. Brain Space Occupying lesions may at times be discovered from a tell-tale papilloedema on ocular examination in a case of intractable headache. A host of Neurological Diseases including demyelinating disorders, infarcts, bleeds, myopathies, encephalopathies and nerve palsies have Neuro-Ophthalmic manifestations almost mandating a Neuro-Ophthalmic Examination in all patients with Neurological symptoms. A pregnant lady with a Pregnancy Induced Hypertension would from an **Obstetrician's point of view** require an eye examination to look for papilloedema and signs of Hypertensive Retinopathy listed above. A **Gastroenterologist** may at times want to look for Copper deposits in the form of a KF Ring in Wilson's Disease. **From a Pediatrician's point of view**, an eye checkup is recommended at timely intervals. Often what appears as a scholastic backwardness may actually be a case of myopia with inability to see the black board. Also, many systemic syndromes in children encountered by Pediatricians have ophthalmic manifestations, like Blue sclera (due to thinned sclera) is a typical association. Osteogenesis Imperfecta characterised by,

Fragilatis Ossium (frequent bone fractures) and deafness. Other systemic diseases that may be associated with blue sclera are Marfan's syndrome, Pseudoxanthoma Elasticum and Ehlers-Danlos syndrome. Finally, Adverse effects of drugs used for systemic disease may be seen in the form of Bull's Eye Maculopathy with Chloroquine and Optic Neuropathy with Ethambutol, Ocular Surface Disease as in Stevens Johnson Syndrome to name just a few.

Thus, a Comprehensive Eye Exam, a relatively simple and comfortable procedure of about 30 minutes duration is thus indeed a window to a host of possible systemic diseases.

HOW OFTEN TO REQUEST AN EYE EXAMINATION?

1. It is best to routinely recommend an eye disease screening examination for adults over the age of 40 years who do not have any signs or risk factors for eye disease. If an individual has an eye disease or a risk factor for developing one, such as diabetes, high blood pressure or a family history of eye disease, it is best to request an eye examination even if younger than 40 years. Adults aged 65 years and over should have a comprehensive eye exam every year.
2. For children, all premature children with low birth weight should have an eye exam within the first month of life (30 DAY RULE) to look for Retinopathy of Prematurity. All normal asymptomatic children should have their first eye test between 3-4 years of age. This is to detect uncorrected

refractive errors and amblyopia which are best treated before 7-9 years of age. This is the CRITICAL period of visual development. If vision problems are not treated appropriately before this critical period, the eye brain connection undergoes permanent changes and then maybe very difficult

to treat. Children with a family history of high refractive errors, early cataracts, children with special needs, children with systemic conditions etc. should have an eye exam as needed.

TAKE HOME MESSAGE

Have an eye examination, not only for the eyes, but also for what it could tell us about the rest of the body.

Parkinson's disease: a complex disease revisited

It is increasingly apparent that there are many associated non-motor symptoms that also need attention and treatment.

The UK's National Institute for Health and Care Excellence puts a new emphasis on managing daytime sleepiness, rapid eye movement sleep behaviour disorder, depression, psychotic symptoms, and Parkinson's dementia. Additionally, it recommends early physiotherapy, occupational and speech therapy, and nutrition advice. In many of the recommendations, early referral to health-care professionals with experience of Parkinson's disease is advised.

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Treating active rheumatoid arthritis with Janus kinase inhibitors

The ORAL Strategy trial by Roy Fleishmann and colleagues in The Lancet studied patients with active rheumatoid arthritis. They had all responded inadequately to methotrexate.

The drug is an orally active Janus kinase (JAK) inhibitor, a relatively new type of drug for rheumatoid arthritis.

Although a combination of JAK inhibitors with methotrexate is likely to be the way they are used in clinical practice, monotherapy results in clinical and functional responses, as shown in the ORAL Strategy trial, and thus might be appropriate in some patients.

Oral JAK inhibitors also increase serious infections

Costs were not assessed in the ORAL Strategy trial.

The ORAL Strategy trial highlights three benefits from the combination of tofacitinib and methotrexate in active rheumatoid arthritis. First this combination's efficacy and toxicity are similar to injectable biologics such as adalimumab.

David L Scott, Matt D Stevenson, The Lancet, 2017, Vol 390, 431-432