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Dry Eye and the Role of Family Physicians
Assoc Prof Louis Tong, Senior Consultant, Corneal and External Eye Disease Service, Singapore National Eye Centre

Dry eye is defined as ‘a common multifactorial disease of the tears and ocular surface that results in symptoms of discomfort, visual disturbance, and tear film instability with potential damage to the ocular surface. It is accompanied by increased osmolarity of the tear film and inflammation of the ocular surface.’

Introduction to dry eye
In primary health settings it could result from increased tear evaporation (for example, from an eyelid problem such as blepharitis or contact lens wear); aqueous tear hyposecretion (this may be age-related or due to administration of anticholinergic drugs); and mucous dysfunction. Conjunctival epithelial cells and mucus-secreting goblet cells in the conjunctiva may be damaged after a previous episode of infectious conjunctivitis.

Dry eye disease has been shown to adversely impact the quality of life of patients by interfering with daily activities, such as navigating stairs, recognising friends, reading, watching TV, computer-related work or driving. In this modern era, management of dry eye is expensive and patients have spent significant amount of direct costs on related medications. In addition, this disease may induce significant loss of work productivity.

Prevalence of dry eye in Singapore
The prevalence of dry eye depends on the age group and the definition of dry eye. The prevalence of dry eye symptoms in Malay adults above 40 years in Singapore was 6.5% (95% confidence interval [CI]: 5.7, 7.4). However, the prevalence of Malays with the sensation of ocular dryness at least occasionally rose to 25.5% of the study population. Prevalence rates would have been even higher if based on objective signs of dry eye used to make a formal diagnosis, such as corneal fluorescein staining, decreased fluorescein tear break up time, or an abnormal Schirmer's test.

Dry eye patient profile
Dry eye commonly presents in elderly post-menopausal women. It can also present in younger adult patients who have undergone corneal refractive procedures or are frequent computer monitor users working in air-conditioned offices. Some patients with laser in-situ keratomileusis (LASIK) may present with dry eyes years after the initial surgery. Patients who had cataract surgery may also complain of dry eye symptoms. Dry eye symptoms tend to be aggravated in low humidity environments or in windy conditions.

Dry eye may be isolated to the ocular surface, or it may be part of a systemic condition. If there is dry mouth, it can indicate the presence of Sjogren’s syndrome. If there is intake of chronic anti-histamines or anti-depressants, dry eye symptoms may be aggravated. Other common conditions that aggravate dry eyes are acne rosacea, thyroid disease, rheumatoid arthritis and Parkinson's disease.

In primary health services, severe dry eye associated with systemic diseases such as Steven Johnson syndrome or graft-versus-host disease is uncommon. However, an effort should be made to document any systemic illness in patients with dry eye. A history of orbital radiation and any ocular (especially refractive), facial, and intracranial surgery should also be documented.

Symptoms
Dry eye may present with 3 types of symptoms. First there may be irritative symptoms such as grittiness, photophobia, burning, fatigue or heaviness of eyelids. Second, there may be paradoxical watery
eyes due to reflex tearing. Third, there may be transient visual blurring associated with prolonged visual tasks. This blurring may be transiently improved by blinking or the instillation of artificial tears.

Be aware that in many patients with dry eye, the clinical examination may be unremarkable in the presence of these symptoms.

Likely treatment options by GPs
After ruling out more serious conditions, the patient should be reassured that dry eye is generally a non-sight threatening condition. The mainstay of treatment is artificial tear eye drops. The preservative-free formulations are safe to be used as frequently as desired and can also be titrated to the intensity of the visual activities performed.

If the original treatment does not provide sufficient relief, consider adding transient gels, eye drops containing osmoprotectants, lipid-containing eye drops or eye drops containing hyaluronate. Longer-acting ointments and viscous gels are best used before sleeping at night as these induce blurring.

Patients may experience stinging sensations shortly after instillation, when there is a mismatch between the acidity of the eye drops and the tear film. Very often, trial-and-error is required to ascertain the most comfortable eye drop for each patient.2

There is a high level of depression and anxiety in dry eye patients, which complicates the management. Patient education is key to ensure compliance to treatment. Patients should be told that this is a chronic condition, and symptoms may not be totally ameliorated. Modification of lifestyle, such as lowering use of computer monitors, and use of moisture chamber glasses may be helpful.

Oral omega-3 fatty acid supplementation has been used in randomised controlled clinical trials, and found to be effective in dry eyes. Traditional Chinese Medication (TCM) may be an option, especially in some older patients who are receptive to a more holistic mode of treatment.

Recently randomised studies have been done overseas8 and in Singapore10 to evaluate the efficacy of TCM modalities such as acupuncture and herbal medication, and these have had encouraging results. Chung Hwa Medical Institution has equipment for eye examinations and practitioners with an interest in eye problems.11

It is important to look for aggravating factors. If contact lenses are worn, these should be limited as far as possible and especially when dry eye symptoms appear, and patients could consider the newer silicon-hydrogel or rigid gas permeable lenses if they need to wear contact lenses.

If patients have been taking drugs with anti-muscarinic side effects, for example, tricyclic anti-depressants, consider alternatives such as selective serotonin reuptake inhibitors. In patients without a clear history of allergies or indications requiring oral anti-histamines, these drugs should not be prolonged unnecessarily.2

While the symptoms of dry eye are being alleviated, commonly associated conditions should be also attended to.2 Ocular symptoms will improve if allergic conjunctivitis, blepharitis, and rosacea are treated appropriately. Remember that discomfort in a contact lens wearer may be due to giant papillary conjunctivitis which is allergic in nature, rather than just dry eye.

The Schirmer’s strip may be used to document dry eye. The result is normally recorded as the length of wetting after 5 minutes. A reading of less than 10 mm may indicate possible dry eye.
The giant papillae may be seen after eversion of the upper eyelids. This condition is normally managed by ophthalmologists.

Certain ocular conditions that aggravate dry eye can be diagnosed by a family physician. For example, the presence of pterygium, a fibrovascular growth that extends from the conjunctiva onto the cornea, can be easily visualized. This condition contributes to poor tear spreading and inflammation, and often aggravates dry eye. If patients are keen for surgical excision, they should be referred to an ophthalmologist.

Eyelid disease such as meibomian gland dysfunction is extremely common in dry eye patients. This is due to occlusion of the oil secreting glands, resulting in poor expressibility of the glands and consequential tear stability. The management of this condition starts with eyelid warming therapy. This consists of warm compresses which should be performed daily about 8-10 minutes a day for an extended duration.

When to refer to a specialist
Refer to an ophthalmologist urgently, if the following warning signs are detected: an acute history, persistent or profound visual loss, associated diplopia, and systemic ill evidence by loss of weight or fever. The presence of copious discharge or chemosis suggests infective conjunctivitis. In such a patient a corneal opacity suggesting keratitis should be looked for.

The primary health physician should also look for painful lumps in the eyelids or any lagophthalmos. In the absence of these features, dry eye patients can be referred routinely, if their symptoms persist despite above measures.

Likely treatment options by the specialist
The likely treatment options by the ophthalmic specialist may include punctal plugs or punctal diathermy, ciclosporine, azithromycin and steroids. Other prescription drugs may help in some instances, for example topical P2Y2 agonists such as diquafasal eye drops, and oral pilocarpine tablets. In very severe dry eye, options may include autologous plasma eye drops and even tarsorrhaphy.

When will the patient be referred back to the GP?
Once a formal diagnosis has been made, many cases of mild dry eyes, especially those without corneal epitheliopathy and not related to systemic illnesses can be managed by family physicians. Some optometrists are equipped with tools like the slit lamp biomicroscope. These health care personnel may be comfortable to make a formal diagnosis of dry eye as well as monitoring patients and giving them tear substitutes.

This article is co-authored by Pat Lim, who is an optometrist in private practice, and a TCM physician practising at the Singapore Chung Hwa Medical Institution.

GP CONTACT
GPs can call for appointments through the GP Appointment Hotline at 6322 9399.

References
Epiblepharon –
A Developmental Eyelid Anomaly
Dr Sunny Shen, Consultant, Oculoplastic Service, Singapore National Eye Centre

Epiblepharon is one of the most common developmental eyelid anomalies among Oriental/East Asian children, comprising 9.5% of the clinical workload in Oculoplastic Service at Singapore National Eye Centre (SNEC).

Introduction
Epiblepharon is a developmental eyelid anomaly characterised by an extra fold of skin and the underlying pretarsal orbicularis oculi muscle stretching across and overlapping the eyelid margin. While our eyelashes normally point forward, the presence of epiblepharon pushes the eyelashes against the cornea; tilting the eyelashes upward for the lower eyelid and tilting the eyelashes downward for the upper eyelid (Figure 1).

This eyelash inversion causes ocular surface irritation: foreign body sensation, frequent blinking, itchiness, repeated rubbing, tearing, discharge, recurrent conjunctivitis, photophobia and keratopathy.

Unlike entropion in which the whole eyelid margin including the tarsus rolls in and rubs against the ocular surface (Figure 2), in epiblepharon the eyelid margin and the tarsal platform is in normal position. Besides, entropion is more common in the elderly population, while epiblepharon affects mainly the paediatric spectrum.

Patient profile
The prevalence of epiblepharon is about 10% in the paediatric population with predilection for the younger age groups; 46% during infancy, 24% at age 1, 7% at age 5-6 and 2% at age 10-18. The resolution with time is associated with growth of the facial skeleton. There is no gender difference in prevalence.

Systemically, epiblepharon is associated with Down syndrome and obesity. There is also a subset of secondary epiblepharon found in thyroid eye disease (TED) patients with significant proptosis. Ophthalmic-wise, it is associated with epicanthic fold and astigmatism.

Epiblepharon usually affects both eyes together although the severity may differ. In 81% of the patients only the lower eyelids are involved, in 12% both the upper and the lower eyelids are involved and in the remaining 7% only the upper eyelids are involved.

The pathophysiology of epiblepharon includes failure of eyelid retractors to gain access to skin and weak attachment of the pretarsal orbicularis oculi muscle and skin to the underlying tarsus, thus raising a skin fold near the eyelid margin and tilting the eyelashes toward the cornea.

Important differential diagnoses of epiblepharon include ocular surface allergy, congenital nasolacrimal duct obstruction and congenital glaucoma.

Management of epiblepharon
Majority of epiblepharon patients can be managed conservatively as the condition improves with age. Topical lubricants reduce the symptoms of ocular irritation. As patients may need very frequent application of the eye drops, the preservative-free preparations are preferred. Topical lubricants however will not soften the eyelashes and make them less damaging.

Indication for surgical intervention include: chronic conjunctivitis, keratopathy (Figure 3) with tearing and photophobia, disturbing rubbing and blinking behaviour, and patients remain symptomatic beyond the age of 9.

Systemically, epiblepharon is associated with Down syndrome and obesity. There is also a subset of secondary epiblepharon found in thyroid eye disease (TED) patients with significant proptosis.
Surgical correction involves a cosmetically acceptable skin incision below the eyelashes (sub-ciliary incision) (Figure 4), excision of a small amount of skin and pretarsal orbicularis oculi muscle, and fixation of hair-bearing skin to underlying tarsus with eversion (Modified Hotz procedure). The success rate is over 90%. The procedure will usually take about 30 minutes for each eyelid and is performed under general anaesthesia for young children.

Conclusion
Epiblepharon is a common cause of ocular surface irritation in children. Although the condition usually improves with age, a small percentage of patients will require further investigation and management.

Persistent or unilateral sore eyes, recurrent tearing and frequent blinking that cannot be explained by common conditions like acute viral conjunctivitis should be referred to ophthalmologists for further investigation.

Role of family physicians
- Differentiating the common causes of paediatric ocular surface irritation from potentially sight-threatening causes. Patients with acute infective conjunctivitis usually have contact history or recent history of upper respiratory tract infection.
- Tearing in a child does not always mean congenital nasolacrimal duct obstruction. Congenital glaucoma, epiblepharon and ocular surface allergy can also give rise to teary eyes.
- Frequent or forceful blinking behaviour does not necessarily mean tics, but more commonly from chronic ocular surface irritations like epiblepharon and ocular surface allergy. Ocular surface allergy may be seasonal and associated with other atopy. In severe ocular surface allergy, there may be periorcular eczematous skin changes.

Persistent or unilateral sore eyes, recurrent tearing and frequent blinking that cannot be explained by common conditions like acute viral conjunctivitis should be referred to ophthalmologists for further investigation.

References
Modern Phacoemulsification and Intraocular Lens Implant

Dr Wang Jenn Chyuan, Senior Consultant, General Cataract and Comprehensive Ophthalmology Service, Singapore National Eye Centre

Cataract surgery is the removal of the natural crystalline lens of the eye, which has developed opacification (now referred to as a cataract). Metabolic and degenerative changes of the crystalline lens fibres over time lead to loss of transparency. This is a very common problem amongst the elderly.

Causes of cataracts
- Ageing
- Diabetes
- Medication/Radiotherapy
- Metabolic disorders
- Eye surgery
- Trauma
- Congenital
- Genetic
- Risks – Pathological myopia

Annually, Singapore National Eye Centre (SNEC) performs the largest number of cataract surgeries in Singapore – 16,400 from October 2012 to September 2013.

The main problem of cataract is visual impairment. In addition, the lens opacities that occur in various patterns give rise to different visual symptoms. Nuclear sclerosis results in increasing refractive errors such as myopia, hyperopia and/or astigmatism, whilst posterior subcapsular cataract causes glare. Consequently, when visual acuities are the same, patients’ ability to function and perform various tasks can vary individually.

So besides poor visual acuity (worse than 6/12), indications for surgery have to be holistic to include visual deficits that compromise occupation, safety, activities of daily living and general well-being.1

Posteriors polar cataract with dense nuclear sclerosis.
Effects of cataracts
• Reduced visual acuity
• Reduced contrast sensitivity
• Changing refractive errors
• Glare, halo, monocular diplopia
• Variable blurring of vision under different lighting conditions
• Altered colour perception
• Depression

Cataract surgery
In cataract surgery, a patient’s cloudy natural lens is first removed and replaced with a synthetic lens to restore the transparency of the media. Current surgical treatment for cataracts is phacoemulsification. First introduced in 1967 by Charles Kelman after his trip to his dentist, it has since then become highly evolved.

This is a machine-assisted procedure performed under the operating microscope. The opacified crystalline lens is first emulsified with an ultrasonic hand-piece and then aspirated from the eye. Balanced salt solution is continuously infused into the eye both to replace the aspirated fluid, thus maintaining the anterior chamber while cooling the surgical incision.

Phacoemulsification
Phacoemulsification is performed using local anaesthesia (either topical, peribulbar, or retrobulbar) in a day surgery setting. Personally, I use topical and intracameral anaesthesia augmented with opioid analgesia for maximum patient comfort. One drop of Gutt Tetracaine 1% is instilled in the eye, just before surgery. The advantage of topical anaesthesia is that it avoids the use of needles that can cause dangerous retrobulbar haemorrhage in patients on anticoagulants.

Another advantage is the surgical access through clear cornea. This incision is bloodless, measuring 1.2-2.75 mm in width. It is self-sealing, optically neutral, and permits swift visual rehabilitation. It is much superior compared to the older extracapsular cataract extraction (ECCE) incisions, which are larger than 10-12 mm and requires 5-7 sutures for closure. The ECCE wound is not as strong and can result in high post-operative astigmatism, which takes months to stabilise.

Current treatment and risks
This is probably the safest surgery to date in terms of both morbidity and mortality. However, occasional complications do occur; risk of blindness in the operated eye is about 1:1000. The causes include retinal detachment, expulsive haemorrhage, chronic inflammation, high intraocular pressure or endophthalmitis. Posterior capsular rupture, which is the tear of the capsule that once held the cataract, occurs in 1-5%. Its occurrence increases the risk of complications to approximately 20%.

Other problems that can reduce best-corrected visual acuity include posterior capsular opacification, de-centred lens, pupil trauma, corneal decompensation, cystoid macular oedema, posterior vitreous detachment, vitreomacular traction and epiretinal membrane formation. Our SNEC internal audits have shown that our success rates (best corrected vision better than 6/12) are 98-99%.

Intraocular lenses
Intraocular lens (IOL) implantation is the other half of the procedure. Once the cataract is removed, an artificial lens similar in design to the original has to be inserted in order to restore function. The old intra-capsular cataract extraction (ICCE) left patients aphakic (without lens or capsular bag), with extremely poor unaided vision and they had to wear very bulky glasses. These glasses gave good visual acuity but very poor visual quality.

The modern day monofocal IOLs, first introduced by Sir Harold Ridley after the Second World War, revolutionised the way cataract surgery was performed. It had undergone much iteration in terms of design, material, biocompatibility and location of surgical placement. The current standard is a soft, single piece, hydrophobic acrylic lens with square edge design that can be folded and injected through the very small incision. In the eye, the IOL unfolds itself and it is placed in the capsular bag.

Premium lenses
As the society became more consumerist, cataract surgery also followed to answer its needs. The aspheric lens, also known as wavefront lens, was introduced after the wavefront revolution in LASIK surgery. Patients became aware of the need for better contrast sensitivity and night vision.2 At the same time, complete spectacle freedom also became a byword for any eye surgery.

Whilst cataract surgery can deliver good refractive results, it is not on par with LASIK. Cataract surgery does not
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In order to improve post-surgical uncorrected visual acuity, high corneal astigmatism was traditionally treated by keratotomies or limbal-relaxing incisions on the cornea. These surgeries reshape the cornea from an ‘oval (toric) shape’ to a more ‘spherical’ profile. But results can be unpredictable and unstable because our understanding of corneal biomechanics is incomplete, and strong tissue healing response can occur in some patients. Other concerns include dry eye symptoms, recurrent corneal erosion and other wound-related problems.

Bearing these problems in mind, the ophthalmic devices industry has introduced new IOLs with the ability to correct or reduce the visual burdens of both astigmatism and presbyopia. These are termed premium IOLs and they can reduce astigmatism and/or presbyopia.

Another expectation that arose was presbyopia treatment. Modern cataract surgery with high safety profile and more predictable refractive outcome has allowed surgeons to ‘customise’ the post-operative refraction. The gold standard arrangement is monovision – the dominant eye is treated to ‘see far’ and the non-dominant eye tasked to ‘see near’. It corrects about half the presbyopia and assumes that all patients adapt readily to the new anisometropia (asymmetry) of vision.

However, monovision is more complex: co-dominance, change of dominance by suppression and ocular rivalry can occur. Some patients may have issues with stereopsis, reduced visual field on the myopic eye as well as night vision symptoms such as halos.

In spite of these, spectacle independence can be achieved approximately 80% of the time and patient satisfaction ranges from 70-90% in various studies.

The toric lenses move the site of corneal astigmatism correction away from the cornea to the IOL. Refractive stability is improved and studies all showed beneficial increase in uncorrected distance visual acuity. Likewise in multifocal lenses, accommodation of natural crystalline lens is mimicked by the pseudo-accommodative optical properties of the IOL.

In pseudo-accommodation, these IOLs do not change shape in order to change the total optical power of the eye i.e. accommodate. They have 2-3 different optical powers built into the optics. The multifocal optic splits the inbound light into two, usually 65%-35% or a 50%-50% for distance and near vision respectively. So the fovea (retina) receives two images simultaneously. (This is different from progressive spectacles where the patient looks through a predetermined part of the spectacle lens with powers allocated for that desired working distance).
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GP CONTACT
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References

Neuroadaptation is necessary for the brain and eye to ‘filter out’ the blurred, unwanted image and ‘see’ the sharper, focused image.

Initially some patients may experience misty vision – bringing objects into focus may take longer and vision can be dimmer because only part of the light entering the eye is in focus. At night, contrast sensitivity is also reduced because of this reason. In addition, the out-of-focused light can manifest as halos or glare. Neuroadaptation and amelioration of symptoms take place over 3-6 months or longer. Maladaptation is uncommon and may necessitate surgical exchange to monofocal lenses.

From the surgical perspective, while pre-operative inherent errors of measurements of IOL power still apply, the orientation, centration and final position of these premium IOLs also heavily influence the final results. Consistency of surgery now becomes critical for the success of these IOLs, hence the introduction of FLACS.

Femtosecond Laser Assisted Cataract Surgery
FLACS is the acronym for femtosecond laser-assisted cataract surgery. It does not replace the current technique of phacoemulsification. Instead, it seeks to augment surgery by improving the reproducibility of certain critical steps of the procedure.

The femtosecond laser, is well-known for its precision in flap creation for LASIK. Although it was often promoted as bladeless surgery, its true value is more than psychological. Not only is it more precise than the microkeratome, it makes flap creation much safer, with better healing.

In cataract surgery, its main benefits are in:
1) creating optimal wound incisions of fixed dimensions;
2) making very round capsulorrhexis (opening in the capsular bag) at desired size and centration; as well as
3) fragmenting lens to reduce intraoperative ultrasound energy expenditure (theoretical reduction in thermal damage and endothelial cell loss).

Better wound construction reduces the incidence of wound leakage and attending risk of endophthalmitis. The round, well-centred capsulorrhexis improves the optical performance of premium IOL and reduces the risk of capsulophimosis (contraction of capsular opening). FLACS is a fairly new procedure and early results have been promising.

Conclusion
Cataract surgery is an evolving field; new technologies that improve the safety and reproducibility of surgery are continually introduced. New premium IOLs offering better post-operative uncorrected visual acuity and IOL-based presbyopia solution are also increasingly popular.
Dermatoses of Pregnancy
Dr Mark Koh, Head and Consultant, Dermatology Service, KK Women’s and Children’s Hospital

The dermatoses of pregnancy are a group of idiopathic skin conditions that occur during pregnancy or shortly after delivery. Although the exact pathogenesis of these diseases have not been fully elucidated, they are likely to occur as a result of the complex interaction of the many physiological changes that occur during pregnancy, in particular, the various hormonal and immunological alterations.

**Introduction**
The dermatoses of pregnancy have undergone various classifications and terminologies. The latest classification by Ambros-Rudolf et al. has identified 4 main idiopathic dermatoses of pregnancy: polymorphic eruption of pregnancy, atopic eruption of pregnancy, pemphigoid gestationis and intrahepatic cholestasis of pregnancy.

Before making a diagnosis of a pregnancy dermatosis, it must be remembered that skin conditions (e.g. psoriasis, scabies) that occur in non-pregnant patients can also occur in pregnancy and these conditions must also be considered in the differentials of rashes that occur in pregnant patients.

**Polymorphic eruption of pregnancy**
Also known as pruritic urticarial papules and plaques of pregnancy (PUPPP), polymorphic eruption of pregnancy (PEP) is not an uncommon dermatosis of pregnancy. In 2013, approximately 15 new cases of PEP were diagnosed by the KK Women’s Dermatology Clinic.

Clinically, patients complain of itch and redness that commonly begin within striae or stretch marks over the abdomen. Sparing of the periumbilical area is classical. The red, itchy wheals then extend over the back, chest, and limbs. Blisters are not seen, in contrast to the less common condition of pemphigoid gestationis.

Severe itching can lead to sleep disturbance and severe psychosocial distress. The rash lasts for about 4 to 6 weeks and usually resolves spontaneously, especially after delivery, even without treatment. Recurrence in subsequent pregnancies is uncommon although has been reported. PEP is not associated with foetal abnormalities, foetal distress or prematurity.

**Treatment**
Treatment will depend on the severity of the condition, and will include a combination of topical steroids, topical anti-pruritics (e.g. calamine lotion), moisturisers and oral anti-histamines (e.g. chlorpheniramine) in mild cases. More severe cases may require a short, tailing course of oral steroids.

**Atopic eruption of pregnancy**
Atopic eruption of pregnancy (AEP) is a term now used to encompass conditions including eczema in pregnancy, prurigo of pregnancy and pruritic folliculitis of pregnancy. Patients commonly have a personal or family history of atopy e.g. atopic dermatitis, allergic rhinitis or asthma. It has been estimated to occur in up to 5% of pregnant patients.

It is postulated that the immunological changes in pregnancy causes a shift from Th1 to Th2 production, leading to the increased incidence and flares of atopic skin diseases in pregnant patients. AEP tends to present earlier in pregnancy compared to PEP, with many patients presenting in the 1st and 2nd trimesters.
Patients present with pruritic, scaly, erythematous, eczematous papules, patches and plaques that can occur on any skin surface but most commonly affects the limbs and trunk. Some patients present with more follicular lesions, and the intense itch and scratching can lead to the formation of thickened prurigo nodules. AEP is not associated with any adverse outcomes for the foetus.

Treatment
Treatment of AEP includes the use of topical moisturisers, topical corticosteroids and oral anti-histamines. In severe cases, a course of oral steroids may be indicated. Although most patients improve or experience resolution after delivery, some patients may continue to develop chronic symptoms of eczema.

Pemphigoid gestationis
Pemphigoid gestationis is an extremely rare dermatosis of pregnancy, with an estimated incidence of 1 in 50,000 pregnancies. The pathogenesis of pemphigoid gestationis is similar to bullous pemphigoid, with autoantibodies directed to the extracellular non-collagenous 16A (NC16A) domain of the transmembrane hemidesmosomal protein, collagen XVII (BP180).

It has been postulated that the protein, present in placental tissues, is abnormally presented to the maternal immune system by HLA class II molecules, which then triggers an immune response from the mother's immune system. There is an association with HLA-DR3 and HLA-DR4. Association with other autoimmune disorders is common. Patients most commonly present in the 3rd trimester and are more common in multigravid women.

Clinically, patients initially present with pruritic wheals and plaques that can be mistaken for PEP. Subtle differences would include involvement of the peri-umbilical skin in pemphigoid gestationis but not in PEP. PEP also commonly begins in abdominal striae gravidarum, which is less commonly affected in pemphigoid gestationis.

After a few days or weeks, patients go on to develop tense vesicles and bullae that spread from the abdominal area to affect other parts of the trunk and limbs. The vesicles and bullae rupture to form erosions.

Diagnosis of pemphigoid gestationis requires skin biopsies sent for routine histology as well as a direct immunofluorescence (DIF). The specimen
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Treatment of pemphigoid gestationis commonly requires the use of systemic steroids e.g. prednisolone, although mild cases may be managed with potent topical corticosteroids.

for DIF needs to be done on peri-lesional skin. A sub-epidermal blister is seen on histology and DIF will reveal linear deposition of C3 and/or IgG in the basement membrane zone.

Treatment

Treatment of pemphigoid gestationis commonly requires the use of systemic steroids e.g. prednisolone, although mild cases may be managed with potent topical corticosteroids. The condition has been known to recur in subsequent pregnancies. There is an association of pemphigoid gestationis with prematurity and intra-uterine growth retardation.

Early onset of disease (1st and 2nd trimesters) and blister formation has been shown to have increased association with foetal complications. A small proportion of infants born to mothers with the condition can present with a self-limiting blistering eruption caused by transplacental transfer of maternal autoantibodies to BP180.

Intrahepatic cholestasis of pregnancy

Intrahepatic cholestasis of pregnancy is an uncommon dermatosis of pregnancy. The etiology of the condition remains unknown but is postulated to be due to a combination of genetic factors, environmental influences and the hormonal changes that occur in pregnancy.

A familial predisposition has been shown. Recurrence in subsequent pregnancies is common. Patients present with severe pruritus, usually in the 3rd trimester of pregnancy. The itching is usually worse at nights. On examination, primary skin lesions are conspicuously absent with only multiple scratch marks seen. These excoriations are commonly generalised.

Although most patients with intrahepatic cholestasis of pregnancy will show abnormalities on liver function tests, especially raised bilirubin levels, some patients may show only increased bile acids. It is important to diagnose the condition as it is strongly associated with foetal complications including preterm delivery and foetal distress. Foetal demise has been reported.

Treatment

Treatment of intrahepatic cholestasis of pregnancy is targeted at reducing maternal bile acids. Ursodeoxycholic acid has been found to be useful in this aspect. Other medications that may be used include cholestyramine, dexamethasone, and S-adenosyl-L-methionine. Treatment has been shown to decrease the risk of foetal complications.

Consideration for delivery at 37 weeks has been advocated by some, as foetal death can occur after 37 weeks of gestation, especially if the cholestasis is persistent despite therapy. Cholestasis and pruritus resolves spontaneously after delivery.

GP CONTACT

GPs can call for appointments through the Specialist Outpatient Clinic Appointment Centre at 6294 4050.

References

New KKH Gait Lab Sheds Light on Walking Dysfunction

Women and children with conditions associated with walking dysfunction will be able to benefit from instrumental clinical gait analysis and assessment with the opening of the new Gait and Clinical Movement Analysis Laboratory (GCMAL), or Gait Lab, at KK Women’s and Children’s Hospital (KKH).

Opened in January 2014 at the Rehabilitation Department, KKH, the new Gait Lab will carry out computerised two- and three-dimensional (3D) clinical gait analyses to measure abnormalities in patients’ walking patterns.

Women and children who will benefit from the Gait Lab’s facilities include those with cerebral palsy, spina bifida, acquired brain injury, severe foot deformities, limb length discrepancies, club foot, abnormal walking dysfunction and sports injuries.

Data captured by the Gait Lab will enable physiotherapists to inform diagnoses, clinical assessments, treatment plans and pre- and post-surgical evaluations. These recommendations will be in consultation with patients’ medical care teams, and can involve orthopaedics, neurology, neurosurgery and physiotherapy, either individually or in combination.

“The Gait Lab will provide a new dimension to our understanding of the patient’s gait posture, and is considered best practice for the management of gait issues,” said Dr Arjandas Mahadev, Head and Consultant, Department of Orthopaedic Surgery, KKH.

“The Gait Lab will enhance our understanding of normal gait parameters among Singaporeans through research studies, and quantify biomechanical and motor control abnormalities in pathological gait. It will also document and provide us with information to improve various therapeutic interventions,” added Satyaki Sengupta, Assistant Director, Division of Allied Health Specialties, KKH.

3D clinical gait analysis is a more accurate and objective method used internationally for analysing pathological gait, than conventional methods such as visual observation. Studies have shown that 3D clinical gait analysis helps improve surgical decision-making1 thus improving patients’ outcomes post surgery2.

The Gait Lab’s accuracy and objectivity also makes it an excellent research tool, as it enables clinician researchers to conduct studies comparing 3D clinical gait analysis results according to specific parameters. The KKH Rehabilitation Department plans to conduct research on locomotor and movement disorders, and issues arising from orthopaedic, neurology and neuro-surgical conditions.

References

CONTACT KKH
General Enquiries
Tel: 6225 5554
Art to Help Children Heal at KKH

Children healing from injuries and illnesses are being aided on their recovery journey by a new Art Therapy Programme established by the Rehabilitation Department at KK Women’s and Children’s Hospital (KKH). Introduced in October 2013, KKH’s Art Therapy Programme enables children to strengthen their resilience and coping ability, and supports their emotional recovery.

The Art Therapy Programme reaches out to children who have experienced traumatic situations, medical procedures such as major surgery, and children with mental wellness concerns such as depression, anxiety and psychosis.

Children suffering from life-changing or challenging situations, such as long-term hospitalisation, chronic or terminal illnesses and trauma, often experience significant emotional setbacks and concerns with regard to self-image, self-esteem and confidence.

Art therapy uses the visual medium of art and the creative process involved in it to help patients explore, express, understand and manage their inner feelings and emotions better.

“The creative process of art making enables the therapist to connect with young patients at a deeper level, facilitating closer communication, understanding and improved healing,” said Pearlyn Lee, the first Art Therapist at KKH’s Rehabilitation Department, who is leading the programme.

“The art product that results from the art therapy leaves behind a powerful ‘visual legacy’ of the child’s experience with the medical condition and situations in their lives. This empowers the child to be in control of and become an active part of the treatment and recovery process.”

It is offered to paediatric inpatients, based on the attending physician’s assessment, and will be provided to subsidised patients at no cost. The programme aims to assist around 300-320 patients a year, and will be extended to include children suffering from long-term and chronic medical conditions.

Studies evaluating the efficacy of art therapy in chronically ill children have found it highly beneficial in addressing anxiety and psychological distress resulting from illness and hospitalisation, thus improving coping abilities and quality of life.

During the first two years of the programme, KKH plans to initiate studies to evaluate the effectiveness of art therapy among children in a hospital setting in Singapore.

Managed by KKH’s Rehabilitation Department, the Art Therapy Programme is a collaborative effort with The Red Pencil Humanitarian Mission, Singapore, who together with their supporter, KOP Properties, has pledged to support the programme for two years.

CONTACT KKH
General Enquiries
Tel: 6225 5554
Singapore General Hospital
GP Hotline: 6321 4402, Email: appointments@sgh.com.sg

Appointments

Dr Hadaway Claire Philippa
Senior Consultant
Dept
Infectious Diseases

Dr Leow Leong Chai
Consultant
Dept
Respiratory & Critical Care Medicine

Dr Puthucheary Lynda Theresa
Associate Consultant
Dept
Anaesthesiology

Dr Poh Yih Jia
Associate Consultant
Dept
Rheumatology & Immunology

Promotions, Senior Consultants

Dr Tan Suan Cheng
Senior Consultant
Dept
Diagnostic Radiology
Sub-specialty
Musculoskeletal Radiology & Musculoskeletal Intervention

Inflammatory Bowel Disease, Small Bowel Diseases, Pancreatobiliary Diseases

Dr Kong San Choon
Senior Consultant
Dept
Gastroenterology & Hepatology
Sub-specialty
Gastroenterology

Dr Seow Chuen Chai Dennis
Senior Consultant
Dept
Geriatric Medicine
Sub-specialty
Dementia, Memory and Cognitive Disorders

Dr Brian Goh Kim Poh
Senior Consultant
Dept
HepatoPancreatoBiliary and Transplant Surgery
Sub-specialty
Hepatobiliary and Pancreatic Surgery, Liver and Kidney Transplantation, Surgical Oncology and Laparoscopic Surgery

Dr Lee Tswen Wen Victor
Senior Consultant
Dept
HepatoPancreatoBiliary and Transplant Surgery
Sub-specialty
Hepatobiliary and Pancreatic Surgery, Laparoscopic Surgery, Surgical Oncology, Liver, Kidney and Pancreas Transplantation

Dr Leung Ying Ying
Senior Consultant
Dept
Rheumatology & Immunology
Sub-specialty
General Rheumatology

Dr Lee Tseu Wen Victor
Senior Consultant
Dept
HepatoPancreatoBiliary and Transplant Surgery
Sub-specialty
Hepatobiliary and Pancreatic Surgery, Liver and Kidney Transplantation, Surgical Oncology and Laparoscopic Surgery

Dr Ho Sun Sien Henry
Senior Consultant
Dept
Urology
Sub-specialty
Minimally-Invasive Urological Surgery, Benign Prostate Enlargement, Uro-Oncology

Dr Seow Chuen Chai Dennis
Senior Consultant
Dept
Geriatric Medicine
Sub-specialty
Dementia, Memory and Cognitive Disorders

Promotions, Consultants

Dr Kenny Loh Wei Tsen
Consultant
Dept
Anaesthesiology
Sub-specialty
Anaesthesia

Dr Cheng Tim-Ee Lionel
Consultant
Dept
Diagnostic Radiology
Sub-specialty
Body Imaging

Dr Louis Elliott McAdory
Consultant
Dept
Diagnostic Radiology
Sub-specialty
Neuroradiology
**Appointments**

- **Dr Tan Hong Chang**  
  Consultant  
  Dept: Endocrinology  
  Sub-specialty: Lipid Disorders, Obesity & Metabolic Syndrome

- **Dr Tan Shu Yun**  
  Consultant  
  Dept: Family Medicine & Critical Care

- **Dr Goh Boon Bee**  
  Consultant  
  Dept: Gastroenterology & Hepatology  
  Sub-specialty: Gastroenterology & Hepatology

- **Dr Ngu Jing Hieng**  
  Consultant  
  Dept: Gastroenterology & Hepatology  
  Sub-specialty: Gastroenterology, Hepatology and Endoscopy with special interest in autoimmune liver diseases

- **Dr Chan Mei Fung Michelle**  
  Consultant  
  Dept: Pathology  
  Sub-specialty: Histopathology, Cytology

- **Dr Lee Yuh Shan**  
  Consultant  
  Dept: Haematology  
  Sub-specialty: Haematology

- **Dr Francisco Salcido Ochoa**  
  Consultant  
  Dept: Renal Medicine  
  Sub-specialty: General Nephrology

- **Dr Satheesh Ramamurthy**  
  Consultant  
  Dept: Diagnostic Radiology  
  Sub-specialty: Interventional Radiology

- **Dr Mohamed Zulfikar Rasheed**  
  Consultant  
  Dept: Plastic, Reconstructive & Aesthetic Surgery  
  Sub-specialty: Reconstructive Microsurgery, Aesthetics

- **Dr Tan Hiang Keat**  
  Consultant  
  Dept: Gastroenterology & Hepatology  
  Sub-specialty: Gastroenterology & Hepatology, Viral Hepatitis, Liver Cirrhosis & Portal Hypertension; Procedures – Diagnostic Endoscopy, Therapeutic Endoscopy

- **Dr Sim Heng Chiak James**  
  Consultant  
  Dept: Pathology  
  Sub-specialty: Microbiology

- **Dr Juliana Poh**  
  Consultant  
  Dept: Emergency Medicine  
  Sub-specialty: Disaster Medicine, Geriatric Emergency Medicine

- **Dr Ngu Jing Hieng**  
  Consultant  
  Dept: Gastroenterology & Hepatology  
  Sub-specialty: Gastroenterology, Hepatology and Endoscopy with special interest in autoimmune liver diseases

- **Dr Mohamed Zulfikar Rasheed**  
  Consultant  
  Dept: Plastic, Reconstructive & Aesthetic Surgery  
  Sub-specialty: Reconstructive Microsurgery, Aesthetics

- **Dr Juliana Poh**  
  Consultant  
  Dept: Emergency Medicine  
  Sub-specialty: Disaster Medicine, Geriatric Emergency Medicine

- **Dr Tan Zhen-Wei Matthew**  
  Associate Consultant  
  Dept: Endocrinology

- **Dr Joethy Janna-Vale**  
  Associate Consultant  
  Dept: Plastic, Reconstructive & Aesthetic Surgery

- **Dr Dr Wong Manzhi**  
  Associate Consultant  
  Dept: Plastic, Reconstructive & Aesthetic Surgery

- **Dr Htay Htay**  
  Associate Consultant  
  Dept: Renal Medicine

**Promotions, Associate Consultants**

- **Dr Tan Zhen-Wei Matthew**  
  Associate Consultant  
  Dept: Endocrinology

- **Dr Joethy Janna-Vale**  
  Associate Consultant  
  Dept: Plastic, Reconstructive & Aesthetic Surgery

- **Dr Wong Manzhi**  
  Associate Consultant  
  Dept: Plastic, Reconstructive & Aesthetic Surgery

- **Dr Htay Htay**  
  Associate Consultant  
  Dept: Renal Medicine
KK Women’s and Children’s Hospital
Appt Hotline: 6294 4050, Email: centralappt@kkh.com.sg

Appointments

Dr Kong Juin Yee
Associate Consultant
Dept Neonatology

Dr Low Meiyi
Associate Consultant
Dept Otolaryngology

Dr Thoon Koh Cheng
Associate Consultant
Dept Paediatrics (Infectious Disease Service)

Dr Thida Win
Consultant
Dept Diagnostic and Interventional Imaging

Dr Manisha Mathur
Consultant
Dept Obstetrics & Gynaecology

Dr Chiang Li Wei
Consultant
Dept Paediatric Surgery

Promotions, Senior Consultants

A/Prof Tan Thiam Chye
Senior Consultant
Dept Obstetrics & Gynaecology

Dr Thida Win
Senior Consultant
Dept Obstetrics & Gynaecology

Dr Dr Thoon Koh Cheng
Senior Consultant
Dept Paediatrics (Infectious Disease Service)

Dr Tan Heng Hao
Senior Consultant
Dept Reproductive Medicine

Dr Thoon Koh Cheng
Senior Consultant
Dept Paediatrics (Infectious Disease Service)

Dr Wendy Teoh Hui Ling
Senior Consultant
Dept Women’s Anaesthesia

Promotions, Consultants

Dr Koh Poh Kim Elisa
Consultant
Dept Gynaecological Oncology

Dr Rashida Zahid Husain
Consultant
Dept Paediatrics (Endocrinology Service)

Dr Abdul Haium Abdul Alim
Consultant
Dept Neonatology

Dr Manisha Mathur
Consultant
Dept Obstetrics & Gynaecology

Dr Rhamba Rai
Consultant
Dept Paediatric Surgery

Dr Chua Tze-Ern
Consultant
Dept Psychological Medicine

Dr Rashida Zahid Husain
Consultant
Dept Paediatrics (Endocrinology Service)

Dr Wijeweera Olivia
Consultant
Dept Paediatric Anaesthesia
Appointments

Promotions, Associate Consultants

Dr Chiou Fang Kuan
Associate Consultant
Dept Paediatrics (Gastroenterology Service)

Dr Gale Lim Jue Shang
Associate Consultant
Dept Plastic, Reconstructive & Aesthetic Surgery

New Appointments

Dr Choo Chih Huei
Head
Dept Psychological Medicine (Women’s Mental Wellness Service)

Dr Thowfique Kadavukarayil Ibrahim
Adjunct Assistant Professor, Duke-NUS Graduate Medical School
Dept Neonatolgy

Dr Mohammad Ashik Bin Zainuddin
Adjunct Instructor, Duke-NUS Graduate Medical School
Dept Orthopaedic Surgery

Dr Ang Hui Chi Annette
Adjunct Assistant Professor, Duke-NUS Graduate Medical School
Dept Otolaryngology

Dr Bong Choon Looi
Adjunct Assistant Professor, Duke-NUS Graduate Medical School
Dept Paediatric Anaesthesia

Dr Yap Te Lu
Adjunct Assistant Professor, Duke-NUS Graduate Medical School
Dept Paediatric Surgery

Dr Mathur Deepak
Adjunct Assistant Professor, Duke-NUS Graduate Medical School
Dept Women’s Anaesthesia

Dr Teo Boon Li Steven
Consultant
Dept Reproductive Medicine

Dr Tan Mary
Consultant
Dept Women’s Anaesthesia

Dr Suzanna Binte Sulaiman
Adjunct Assistant Professor, Duke-NUS Graduate Medical School
Dept Obstetrics & Gynaecology
National Heart Centre Singapore
GP Hotline: 6436 7848, Email: central.appt@nhcs.com.sg

New Appointments

Dr Aaron Wong Sung Lung
Head and Senior Consultant
Dept: Cardiology
Sub-speciality: Interventional Cardiology

Dr Jack Tan
Deputy Head and Senior Consultant
Dept: Cardiology
Sub-speciality: Interventional Cardiology

Assoc Prof Kenny Sin
Clinical Associate Professor,
NUS Yong Loo Lin School of Medicine
Dept: Cardiothoracic Surgery
Sub-speciality: Cardiac Surgery (Adult), Thoracic & Vascular Surgery

Recruitment

Singapore Health Services (SingHealth), Singapore’s largest Academic Healthcare Cluster, is committed to providing affordable and accessible quality healthcare to patients. With a total of 42 clinical specialties, its network of 2 Hospitals, 5 National Specialty Centres, 9 Polyclinics and a Community Hospital delivers a comprehensive range of multi-disciplinary and integrated medical care.

SingHealth is responsible for developing Sengkang Health, a new healthcare system to deliver patient-centric care to the community in the north-east of Singapore. By 2018, a general hospital and a community hospital will be fully operational in Sengkang. The collective strengths of SingHealth and Duke-NUS, its partner in research and medical education, pave the way for the transformation of healthcare.

If you are a qualified doctor, a challenging career awaits you at SingHealth. We seek suitably qualified candidates to join us as:

Associate Consultants/Consultants/Senior Consultants
(Anaesthesia, Diagnostic Radiology, Gastroenterology, Geriatric Medicine, Haematology, Infectious Disease, Internal Medicine, Neurology, Neurosurgery, Pathology, Rehabilitation Medicine, Renal Medicine, Respiratory Medicine, Rheumatology)

Requirements

• Recognised postgraduate Medical Degree such as MRCS, MRCP, FRCR, FRCA or its equivalent in its relevant discipline*
• Completed specialty training in the relevant specialty in countries such as UK, USA, Hong Kong, Australia or New Zealand
• Registered as a specialist and has working experience at the level of a specialist
• Strong interest and/or credentials in research and/or education activities will be an advantage

*Medical schools which are recognised by The Singapore Medical Council (SMC) are listed in the Schedule of the Medical Registration Act (http://www.smc.gov.sg).

Please send in your resume stating the reference number, your full personal particulars, educational qualifications, career history, present and expected salary, contact number and e-mail address to:

Strategic Human Resource (Medical Manpower) (MN1210)
Singapore Health Services Pte Ltd
168 Jalan Bukit Merah, Surbana One,
#17-01, Singapore 150168

E-mail: med_career@singhealth.com.sg

For more information please visit: www.singhealth.com.sg
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iPhone  Android

For more info, visit our website: www.singhealth.com.sg/healthbuddy/
GP Seminar
Epilepsy and Sleep Disorders

This CME programme aims to improve the abilities of GPs to manage patients with epilepsy and sleep disorders through greater reliance on clinical skills and knowledge, and less reliance on expensive tests and specialty referrals.

At the end of the seminar, participants should be able to:
1. Manage children and adults with fits in the clinic.
2. Describe the clinical features and treatment of sleep apnoea, narcolepsy (excessive daytime sleepiness) and restless leg syndrome.
3. Treat insomnia pharmacologically (without using hypnotics) and non-pharmacologically (good sleep hygiene, cognitive-behavioural therapy and light therapy).

Paediatric Eye Conditions and Strabismus

This course will provide family physicians and paediatricians with updates and practical information on paediatric eye diseases and strabismus.

Topics covered include:
• Eye examination in children and assessment of strabismus – What a GP or paediatrician can do
• Approach to a child with face turn
• Congenital ocular disorders in children
• Management of strabismus in children and adults
• Approach to a child with watery, red or itchy eyes
• Paediatric eye conditions you need to know

Course Director
Dr Quah Boon Long

Course Faculty
Dr Audrey Chia
Dr Sonal Farzavandi
Dr Zena Lim
Dr Yvonne Ling

Date
22 February 2014, Saturday

Time
1 pm – 3.45 pm

Venue
National Neuroscience Institute (NNI)
11 Jalan Tan Tock Seng
Singapore 308433
(NNI is located within Tan Tock Seng Hospital)

CME Points
2 points

Fees
Free

Contact
The NNI GP Seminar Secretariat
National Neuroscience Institute
Tel: 6357 7163
Fax: 6256 4755
Email: nni_secretariat@nni.com.sg

Registration is required.
**6th Singapore International Parkinson’s Disease and Movement Disorders Symposium**

The Symposium will focus on the causes, diagnosis and management of Parkinson’s Disease and Movement Disorders. Its format will include plenary sessions, parallel sessions, workshops and video presentations. It will provide an opportunity for participants to learn about the latest research and perspectives from the speakers and be exposed to up-to-date information in the field of Parkinson’s Disease and Movement Disorders.

Our faculty comprises renowned international and local experts, who will organise an academically rich and enjoyable programme for participants from Singapore and the region.

<table>
<thead>
<tr>
<th>REGISTRATION CATEGORY</th>
<th>NORMAL REGISTRATION</th>
<th>ON-SITE REGISTRATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physicians and Researchers</td>
<td>$250.00</td>
<td>$300.00</td>
</tr>
<tr>
<td>Trainers, Nurses, Allied Health Professionals and other Medical Professionals</td>
<td>$170.00</td>
<td>$220.00</td>
</tr>
<tr>
<td>NNI-CCPP Partners</td>
<td>Follow rates of respective categories</td>
<td></td>
</tr>
</tbody>
</table>

All prices quoted are in Singapore Dollars (SGD) and are inclusive of prevailing taxes.

1. Trainee/Student identification or proof of qualifying trainee/student status MUST accompany the registration form to qualify for Trainee/Student fees. Proof of status is also required when registering on-site.

2. NNI-CCPP: Partners of NNI-Community Care Partners Programme (CCPP).

* This symposium is for healthcare professionals only.

**Pre-Symposium Workshop**

**Physiotherapy Management of Parkinson’s Disease**

Organised by SGH Postgraduate Allied Health Institute (PGAHI), this workshop aims to provide participants with an opportunity to enhance their knowledge and understanding of the current evidence-based assessment and management of people with Parkinson’s disease (PD). It also covers the use of movement strategy training to address gait, freezing and mobility issues, and design of effective treatment programmes for people with PD.

**Date**
1 – 3 April 2014, Tuesday to Thursday

**Time**
9 am – 5.30 pm

**Venue**
Academia
Singapore General Hospital
20 College Road Singapore 169856

**Fees**
- $810 per participant (SPA Member)
- $900 per participant (Normal)

**Contact**
Ms Joyce Lee
Tel: 6576 2708
Email: joyce.lee.g.l@sgh.com.sg

**Registrations by 14 March 2014.**

Visit www.nni.com.sg to download the registration form. Completed forms and supporting documents can be mailed, faxed or emailed to the Secretariat.

---

**Date**
4 – 5 April 2014, Friday to Saturday

**Time**
8.30 am – 5.30 pm

**Venue**
The Academia
Singapore General Hospital
20 College Road Singapore 169856

**CME Points**
Application in process

**Contact**
The 6th Singapore International Parkinson’s Disease and Movement Disorders Symposium Secretariat
National Neuroscience Institute
11 Jalan Tan Tock Seng
Singapore 308433
Tel: 6357 7163 / 7640
Fax: 6256 4755
Email: nni_secretariat@nni.com.sg

**Registrations by 15 March 2014.**

All registrations and payment received after this date will be considered as On-site Registration and processed on-site.

Visit www.nni.com.sg to download the registration form. Completed forms and supporting documents can be mailed, faxed or emailed to the Secretariat.
A signature event of SingHealth and Duke-NUS’s joint academic partnership, the SingHealth Duke-NUS Scientific Congress is one of the largest and most distinguished healthcare-related scientific events in Singapore. This biennial Congress brings together international thought leaders and healthcare professionals to share insights in care improvement, research, and education to improve patients’ outcomes.

Themed Academic Medicine – Transforming Vision into Reality, the SingHealth Duke-NUS Scientific Congress 2014 will be held on 5 – 6 September at Academia. It will focus on showcasing the best in Academic Medicine to transform discoveries and findings into better care for the patients.

Increase your Academic Impact
The Scientific Committee invites all in the healthcare and research community to submit abstracts for consideration as an oral or poster presentation in the Congress programme. Closing date for submission is 20 March 2014 (strictly no extension).

Categories
1. Basic Science
2. Clinical Research
   - Senior (above age 30)
   - Junior (below and/or age 30)
3. Education Research
4. Evidence-based Medicine
5. Health Services & Systems Research
6. Translational Research

Awards
- Best Oral Presentation and Poster Awards for each of the above categories
- SingHealth Duke-NUS Young Scientist Award
- Special Awards for Categories of Nursing, Allied Health Professionals and Students

For instructions on submissions, please visit www.singhealthacademy.edu.sg/sdc