Headaches in Children

Management of Atopic Dermatitis

Functional Abdominal Pain Syndrome in Children

FOCUS: PAEDIATRICS
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When Should Your Paediatric Patient’s Headache Be Your Headache?
Dr Subramania S Krishnamoorthy, Consultant Paediatrician, Department of Paediatrics, General Paediatrics & Adolescent Medicine Service, KK Women’s and Children’s Hospital

Introduction
Headache is one of the most common health complaints by children and adolescents but remains under-recognised as a problem by patients, parents and practitioners alike. The reported incidence seems to be on the rise globally, the causes of which are poorly understood.

A study by Sillanpaa and Antilla reports rise in prevalence of headache from 14% in 1974 to 52% in 1996 in 7-year-old Finnish school children. Studies of Swedish school children have indicated that 39% experience headaches by 7 years and this rises to 70% by 15 years of age. A Canadian study reports prevalence of at least once weekly headaches in 26.6% of 12- to 13-year-olds and 31.2% of 14- to 15-year-olds. Apart from seeking pain relief, parents often look for reassurance that the headache is not due to a sinister underlying cause.

Primary care providers have an important role to play in the management of headaches in children as a good history will provide clues to the diagnosis in a vast majority of children.

Migraine and tension-type headache are by far the commonest causes of primary headaches in children. Migraine affects about 1-3% of children by 7 years and 4-11% by 15 years, while the prevalence of tension-type headache in school children is estimated to be around 1%. The fact that these headaches persist into adult life in about 73% with the majority reporting moderate to severe headaches is worrying.

This article seeks to update the primary care practitioner on current approaches to the management of headaches in children and adolescents in the primary care setting.

Case setting
Judith is a 12-year-old girl who has been brought to your practice by her mum as she has been complaining of intermittent headaches since the last six months. She occasionally takes paracetamol for pain relief and admits to being stressed over her forthcoming exams. How would you proceed to manage her?

Local incidence
According to a recent questionnaire-based survey of 2,873 school children between 6-16 years in Singapore, the prevalence of headache was as high as 80% with an incidence of nearly 10% for tension-type headaches and 8.6% for migraine locally. The incidence here seems to be higher than those reported from India or China regionally and the pattern of headaches mirror those reported from Europe and US. The study also identified sleep deprivation as a primary cause locally and parents as well as schools are being blamed for the same. The consolation for us is that in spite of the high incidence, secondary causes of headaches are indeed rare, as has been reported from elsewhere in the world.
The headache ‘database’, developed by Dr David Rothner\(^8\) has been the most widely quoted document for a thorough initial history, applicable in outpatient setting as well. Table 1 details the information to be gathered at the initial interview to determine the need for further work-up. Constraints of time for a detailed history are often quoted as the reason for a less comprehensive assessment in primary care. The time available for each patient consultation in GP clinics in UK is 10 minutes and probably lesser here.

**Headache database:**

**Key questions to ask in the evaluation of children with headaches**

1. How and when did your headache(s) begin?
2. What is the time pattern of your headache: sudden first headache, episodes of headache, and everyday headache, gradually worsening, or a mixture?
3. How often does the headache occur and how long does the headache last?
4. Do you have one type of headache or more than one type?
5. Are there warning signs or can you tell that a headache is coming?
6. Where is the pain located and what is the quality of the pain: pounding, squeezing, stabbing, or others?
7. Are there any other symptoms that accompany your headache: nausea, vomiting, dizziness, numbness, weakness, or others?
8. What makes the headache better or worse? Do any activities, medications, or foods tend to cause or aggravate your headaches?
9. What do you do when you get a headache; do you have to stop your activities when you get a headache?
10. Do the headaches occur under any special circumstances or at any particular time?
11. Do you have other symptoms between headaches?
12. Are you taking or are you being treated with any medications (for the headache or other purposes)?
13. Do you have any other medical problems?
14. Does anyone in your family suffer from headaches?
15. What do you think might be causing your headaches?

**Table 1**

<table>
<thead>
<tr>
<th>Question</th>
<th>Possible Medical Conditions</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. How and when did your headache(s) begin?</td>
<td>- Aneurysm</td>
</tr>
<tr>
<td>2. What is the time pattern of your headache: sudden first headache,</td>
<td>- Migraine</td>
</tr>
<tr>
<td>episodes of headache, and everyday headache, gradually worsening, or</td>
<td>- Tension-type headache</td>
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<tr>
<td>a mixture?</td>
<td>- Cluster headache</td>
</tr>
<tr>
<td>3. How often does the headache occur and how long does the headache</td>
<td>- Bacterial meningitis</td>
</tr>
<tr>
<td>last?</td>
<td>- Viral meningitis</td>
</tr>
<tr>
<td>4. Do you have one type of headache or more than one type?</td>
<td>- Encephalitis</td>
</tr>
<tr>
<td>5. Are there any other symptoms that accompany your headache: nausea,</td>
<td>- Cerebral abscess</td>
</tr>
<tr>
<td>vomiting, dizziness, numbness, weakness, or others?</td>
<td>- Intracranial hypertension</td>
</tr>
<tr>
<td>6. What makes the headache better or worse? Do any activities,</td>
<td>- Myoclonic epilepsy</td>
</tr>
<tr>
<td>medications, or foods tend to cause or aggravate your headaches?</td>
<td>- Subdural haemorrhage</td>
</tr>
<tr>
<td>7. What do you do when you get a headache; do you have to stop your</td>
<td>- Epilepsy</td>
</tr>
<tr>
<td>activities when you get a headache?</td>
<td>- Cluster headaches</td>
</tr>
<tr>
<td>8. Do the headaches occur under any special circumstances or at any</td>
<td>- Migraine</td>
</tr>
<tr>
<td>particular time?</td>
<td>- Meningitis</td>
</tr>
<tr>
<td>9. Do you have other symptoms between headaches?</td>
<td>- Brain abscess</td>
</tr>
<tr>
<td>10. Are you taking or are you being treated with any medications (for</td>
<td>- Brain tumour</td>
</tr>
<tr>
<td>the headache or other purposes)?</td>
<td>- Tumour</td>
</tr>
<tr>
<td>11. Do you have any other medical problems?</td>
<td>- Tumour</td>
</tr>
<tr>
<td>12. Does anyone in your family suffer from headaches?</td>
<td>- Tumour</td>
</tr>
<tr>
<td>13. What do you think might be causing your headaches?</td>
<td>- Tumour</td>
</tr>
</tbody>
</table>

**The five temporal patterns of childhood headache**

1. **Acute headache** represents a single episode of head pain without prior history of similar events. In adults, the ‘first and worst’ headache raises concerns for aneurismal; subarachnoid haemorrhage. In children, the clinical pattern of headache is most commonly due to febrile illness, secondary to upper respiratory tract infections and the like.

2. **Acute-recurrent headaches** imply a pattern of attacks of head pain separated by symptom-free intervals. Primary headache syndromes such as migraine or tension-type headache usually cause this pattern. Infrequently recurrent headaches are attributed to epileptic syndromes (e.g. benign occipital epilepsy), substance abuse, or recurrent trauma.

3. **Chronic progressive headache** represents the most ominous of the temporal patterns and implies a gradually increasing frequency and severity of headache. The pathological correlate is increasing intracranial pressure. Causes of this pattern include pseudotumour cerebi, brain tumour; hydrocephalus, chronic meningitis, brain abscess, or subdural collections.

4. **Chronic non-progressive or chronic daily headache (CDH)** represents a pattern of frequent or constant headache. CDH is generally defined as four months history of 15 headaches/month with headaches lasting four hours. Affected patients have normal neurological examinations. There are usually interwoven psychological factors and great anxiety about underlying organic causes.

5. **Mixed headache pattern** represents the superimposition of acute-recurrent headache (usually migraine) upon a chronic daily background pattern, and therefore, represents a variant of CDH.
of headache (No. 6) is also a sensitive question to be asked without ‘leading clues’ as persistent or recurrent occipital headaches or unilateral headaches have been linked to secondary causes in most of the studies.9

Management
A confident reassurance to the patient and parent once you are convinced that the headache is not a sinister one is very important and is the first step in the management. In such situations, all that is needed is ‘SMART’ headache management10 – emphasis on Sleep, Meals, Activity, Relaxation and Trigger avoidance. Emphasis should be paid to caffeine use as there have been direct links to incidence and severity of migraine with excessive caffeine use and caffeine withdrawal.11-13 Increasing incidence of headaches has been reported in obese children and these may have a link to benign intracranial hypertension and need more studies.

From an analysis of the symptoms and findings on physical examination, literature is unanimous in suggesting that the following ‘red flags’ should alert the practitioner to the need for a more detailed work-up or referral.14 These are summarised in Table 3. Investigations in hospital will depend on the cause and in most cases might include neurodiagnostic studies such as LP and CSF studies, EEG, and neuroimaging including MRI and MRA. Refractory errors as a cause of headache was highlighted till recently, but a recent statement published on Medline plus15 points to this as a less likely cause of recurrent or persistent headaches in children.

The International Headache Society (IHS) has come up with defined criteria16 for the diagnosis of paediatric migraine as well as tension-type headaches and they are widely publicised in major journals and text books. It is important for the primary care practitioner to have an understanding of these as well as initial management in such circumstances.

Symptomatic medications can be prescribed in cases where no ‘red flags’ are identified in history and physical examination and frequent review is important in such cases to assess the progress. Although 5 HT antagonists like Sumatriptan, Zolmitriptan, etc are increasingly used for the prevention and treatment of migraine in adults, these are not currently approved for paediatric use. Rizatriptan is currently approved for use in 6 to 16 year age groups and Almotriptan is approved for use in 12 to 17 year age groups. Complementary therapies like biofeedback therapy, relaxation techniques, hypnosis, acupuncture and training in the use of coping mechanisms have been found to be useful in varying situations of chronic headache.

Summary
Paediatric headaches are a common problem, but are under-diagnosed. Most of them need a careful analysis of history and a detailed physical examination only and secondary causes like brain tumours as a cause are indeed rare. Parents and patients often seek help to reassure themselves and a judicious decision for referral may be made using ‘red flag’ features in history and physical examination.

Headache assessment red flags

<table>
<thead>
<tr>
<th>Historical</th>
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<tbody>
<tr>
<td>• Age &lt;3 years</td>
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<tr>
<td>• Morning or nocturnal headache</td>
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<tr>
<td>• Headache increased by Valsava or straining</td>
</tr>
<tr>
<td>• Explosive onset</td>
</tr>
<tr>
<td>• Progressively worsening over time (chronic progressive pattern)</td>
</tr>
<tr>
<td>• Declining school performance or personality changes</td>
</tr>
<tr>
<td>• Altered mental status</td>
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<td>• Epilepsy</td>
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<table>
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<tr>
<th>Physical examination</th>
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<tbody>
<tr>
<td>• Hypertension</td>
</tr>
<tr>
<td>• Head circumference &gt;95%</td>
</tr>
<tr>
<td>• Neurocutaneous markers</td>
</tr>
<tr>
<td>• Meningeal signs</td>
</tr>
<tr>
<td>• Papilledema</td>
</tr>
<tr>
<td>• Abnormal eye movements</td>
</tr>
<tr>
<td>• Motor asymmetry</td>
</tr>
<tr>
<td>• Ataxia</td>
</tr>
<tr>
<td>• Gait disturbance</td>
</tr>
<tr>
<td>• Abnormal deep tendon reflexes</td>
</tr>
</tbody>
</table>

Table 3

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

References
Practical Management of Atopic Dermatitis in Children
Dr Mark Koh, Head and Consultant, Dermatology Service, KK Women’s and Children’s Hospital

Introduction
Atopic dermatitis or atopic eczema is the most common dermatosis in infants and children. It affects 20% of school-going children in Singapore. Up to 60% of patients present within the first year of life and 85% by 5 years of age.

Patients with atopic dermatitis frequently have a personal or family history of other atopic diseases i.e. allergic rhinitis, asthma and allergic conjunctivitis. Genetic mutations in genes encoding proteins that make up the skin barrier, in particular filaggrin, have been found to be associated with atopic dermatitis. Other genetic mutations have been found in genes encoding cytokines, which are involved in skin inflammation. Atopic dermatitis lesions are often secondarily infected with Staphylococcus aureus. Other common aggravating factors of atopic dermatitis include house dust mites, strong soaps and detergents, changes in ambient temperature and humidity, and emotional or physical stress.

Clinical presentation
Atopic dermatitis presents as a chronic, recurrent, pruritic rash with an age-specific morphology and distribution of lesions.

In infants, it commonly presents as pruritic, scaly, erythematous plaques, most commonly over the scalp, cheeks and forehead (Figure 1). In more severely affected patients, lesions can become more widespread, affecting the trunk and flexor surfaces of the limbs. Lesions can become secondarily infected and appear oozy and crusted. Lesions around the mouth can be worsened by irritating foods and saliva. In older infants and children, lesions have a tendency to develop features of chronicity e.g. thickening and lichenification (Figure 2). Commonly involved sites include the popliteal and antecubital regions, wrists, ankles, hands and feet. Nummular or discoid lesions are also commonly seen (Figure 3). The adult phase begins usually around puberty. Patients present with dry, scaly, erythematous papules and plaques, sometimes with larger, more lichenified plaques. Common sites include the face, neck, back, hands and feet. Secondary infection and concomitant irritant contact dermatitis are not uncommon. Post-inflammatory hypo- or hyperpigmentation are common sequelae seen in Asian patients with atopic dermatitis, and may take several months to resolve. Other commonly associated dermatoses seen in patients with atopic dermatitis include pityriasis alba and keratosis pilaris.

Pityriasis alba presents as poorly demarcated, hypopigmented, slightly scaly patches on the face, which can be worsened by sun exposure and swimming. Commonly mistaken for...
tinea versicolor, it is believed to be a mild form of dermatitis with post-inflammatory hypopigmentation. Keratosis pilaris presents as small, hyperkeratotic, slightly erythematos, follicular papules, most commonly occurring on the outer arms, face and thighs.

**Diagnosis**
The diagnosis of atopic dermatitis is largely made on clinical grounds. Skin biopsies may aid if there is difficulty differentiating it from other less common dermatoses. Patch tests may be ordered in patients with suspected concomitant allergic contact dermatitis. However, the incidence of allergic contact dermatitis in children is low. Skin prick tests or specific serum IgE tests can be performed if certain foods are suspected aggravating factors. However, interpretation of these tests should be done in conjunction with a paediatric allergist, especially if there is a strong suspicion of food allergy worsening the condition.

**Treatment**
Treatment of atopic dermatitis depends on the age of the patient, and the severity and extent of disease. It usually requires a stepped approach. General measures include avoidance of triggers e.g. harsh soaps and detergents, dusty, hot and humid environments.

**Daily short (5-10 min) showers or baths** using cool or slightly warm water, with a mild soap or soap substitute is recommended. Gentle soaps include emulsifying ointment, Dove Moisturising Body Wash, Cetaphil Gentle Skin Cleanser, Physiogel Cleanser and QV Wash. Bubble baths should be avoided. An anti-bacterial soap (e.g. chlorhexidine soap) or dilute bleach baths may be used 2-3 times weekly in patients with frequent secondary Staphylococcal infection.

Frequent, daily applications of moisturisers are essential in the treatment of atopic dermatitis to aid in restoring the damaged skin barrier. The thicker the moisturiser, the more effective it is as an emollient. Lotions are usually not effective in atopic skin. Some patients may find thick, greasy ointments (e.g. paraffin) unpleasant to use. Non-ointment moisturisers, especially newer formulations containing ceramides (e.g. Physiogel AI or Cetaphil Restoraderm) are usually more acceptable to patients. Advise patients to choose a moisturiser that is effective, pleasant to use, and affordable. Moisturisers should be applied on the entire skin surface within three minutes of a bath or shower, even on areas not clinically affected by eczema. It should be re-applied at least 2-3 times daily. To reduce the recurrence of flares, patients should be advised to continue daily application of moisturisers, even after the clinical signs of atopic dermatitis have resolved.

**Topical corticosteroids** are still the mainstay of treatment for atopic dermatitis. These are available in a wide range of potencies and the choice of potency depends on patients’ age, and the site and severity of eczema.

Low-potency corticosteroids (e.g. hydrocortisone 1% cream, desonide lotion) may be used in infants and on the face and groin areas of children. Mid-potency corticosteroids (e.g. betamethasone valerate 0.025% or 0.05%) may be safely used in older children, adolescents and adults with mild eczema. High-potency corticosteroids (e.g. betametasone valerate 0.1%, mometasone cream) may be used for moderate-to-severe involvement in older children and adults. Very high-potency corticosteroids (e.g. clobetasol propionate, betametasone dipropionate) should be reserved for effective, pleasant to use, and affordable. Moisturisers should be applied on the entire skin surface within three minutes of a bath or shower, even on areas not clinically affected by eczema. It should be re-applied at least 2-3 times daily. To reduce the recurrence of flares, patients should be advised to continue daily application of moisturisers, even after the clinical signs of atopic dermatitis have resolved.

**“Wet-wrap therapy increases the effectiveness of topical creams, helps to keep the skin hydrated and helps to cool the skin and decrease itch.”**

**Figure 2** Childhood eczema with features of chronicity including induration and lichenification.
older patients with thick, lichenified lesions for short durations. Combination topical steroids and antimicrobials (e.g. Fucicort cream, betamethasone valerate with vioform) are useful if there are signs of secondary infection. Ointments are generally less irritating than creams and are more potent. However, they are greasier and patients may find them unattractive for daily use. Topical steroids should be applied 1-2 times daily, preferably immediately before or after applying moisturisers.

A step-down to lower potency formulations is recommended when lesions improve. It should be continued as long as lesions remain red, raised and pruritic. If a strong topical steroid is prescribed, early review of the patient is recommended so as to monitor for side effects of over-application. Cutaneous side effects of topical steroids include skin thinning, striae, telangiectasias, hypopigmentation and easy bruising. Systemic absorption of topical steroids can occur if large amounts of a potent formulation are used for long periods, leading to systemic side effects.

The topical calcineurin inhibitors (tacrolimus and pimecrolimus) are newer immunomodulators that may be used in place of topical corticosteroids. They do not exhibit the same side effects as topical corticosteroids (e.g. skin atrophy, striae, hypopigmentation and easy bruising) and are particularly useful for use around the eyes, face, groin and flexural areas. The topical calcineurin inhibitors should be applied twice daily on affected areas. Patients should be warned of skin irritation and burning on initial use. This usually improves on continued use and rarely requires discontinuation of treatment.

The use of wet-wrap therapy has been a more recent addition to the treatment of atopic dermatitis. This entails the use of two layers of tubular dressings (e.g. Tubifast) applied after the application of creams. The inner layer of dressings is moistened with tepid water, while the outer layer is left dry. Dressings are left on for several hours each day and the inner layer can be re-moistened when dried. Wet-wrap therapy increases the effectiveness of topical creams, helps to keep the skin hydrated and helps to cool the skin and decrease itch.

Sedating anti-histamines (e.g. hydroxyzine, chlorpheniramine) are useful at nights to help with itch and improve sleep time. Short 1-2 week courses of oral anti-staphylococcal antibiotics (e.g. cloxacillin, cephalaxin) are useful for infected eczemas, together with potassium permanganate soaks. Similarly, short tailed courses of oral corticosteroids may be used to control flares of disease but should be limited to three times a year. Patients who have more severe, extensive disease or those with frequent flares should be referred to a dermatologist to optimise treatment. For these patients, other treatment options include phototherapy (e.g. narrow-band ultraviolet B) and systemic immunosuppressants (e.g. ciclosporin, azathioprine, methotrexate).

**Prognosis**

Atopic dermatitis tends to improve with age, with up to 70% of patients clearing by puberty. However, it can recur again during adulthood. Most patients have mild disease, with minimal impact on quality of life. However, the quality of life can be severely affected in patients with moderate to severe disease, leading to significant impairment in sleep patterns, school performance and psychosocial development. It is important to remind patients, parents and caregivers that even though the condition cannot be cured, good control can be achieved with good skin care and most patients do improve as they get older.

**GP CONTACT**

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

**References**

Chronic Abdominal Pain and Functional Abdominal Pain Syndrome in Children
Dr Raveen Shahdadpuri, Consultant, Department of Paediatrics, General Paediatrics & Adolescent Medicine Service, KK Women’s and Children’s Hospital

Introduction
Abdominal pain is one of the most common complaints for which children and their carers seek medical attention. This is particularly true for chronic abdominal pain which has been ongoing for a prolonged period (as opposed to sudden onset of acute abdominal pain).

A child who chronically complains of abdominal pain is often a formidable challenge. Although the symptom usually indicates a benign problem, the parents may be very worried, the child may be in distress, the practitioner may be concerned about ordering tests to avoid missing serious occult disease, and the family may be enmeshed in psychosocial complexities.

Management of this problem can be time consuming and frustrating. Yet, in only a small number of such children is the abdominal pain caused by a true underlying organic disease.

In most children, the pain is functional, that is, without demonstrable evidence of a pathologic condition such as an anatomic, metabolic, infectious, inflammatory, or neoplastic disorder.1

For the purposes of this article, I will focus on chronic abdominal pain and in particular, functional abdominal pain syndrome (FAPS), as the management of this is important and to help avoid any unnecessary painful and expensive testing.

Apley first defined recurrent abdominal pain (RAP) as three or more episodes of abdominal pain severe enough to interfere with a child’s activities and occurring during a period longer than three months.2 Historically, the incidence of recurrent abdominal pain has been reported to be 10% to 15% in children between 4 to 16 years of age.3

Further reports describe the occurrence of RAP to be between 15% and 20% of American middle school and high school students, typically affecting children between the ages of 4 to 12 years.4,5

Literature from local and regional centres, while not as numerous, is available. In a study performed in rural and urban school children in Malaysia, Boey et al found that the overall prevalence of RAP among 1549 school children (764 boys; 785 girls) was 10.2%.6 The only available

Background
Chronic abdominal pain is also known as recurrent abdominal pain (RAP) in medical literature and these terms are often used interchangeably. However, the term ‘recurrent abdominal pain’ as currently used clinically and in the literature should be retired and replaced by functional abdominal pain syndrome (FAPS).

Functional abdominal pain syndrome (FAPS) is the most common cause of chronic abdominal pain. It is a specific diagnosis that needs to be distinguished from anatomic, infectious, inflammatory, or metabolic causes of abdominal pain.

Rome III Diagnostic criteria* for Functional Abdominal Pain Syndrome (FAPS)

Must include all of the following:
1. Continuous or nearly continuous abdominal pain
2. No or only occasional relationship of pain with physiological events (e.g. eating, defecation, or menses)
3. Some loss of daily functioning
4. The pain is not feigned (e.g. malingering)
5. Insufficient symptoms to meet criteria for another functional gastrointestinal disorder that would explain the pain

*Criteria fulfilled for the last three months with symptom onset at least six months before diagnosis

Rome III criteria – Reference

Table 1
Alarm symptoms or signs suggesting organic disease

The presence of alarm symptoms or signs, includes but is not limited to:

- Involuntary weight loss
- Deceleration of linear growth
- Gastrointestinal blood loss
- Significant vomiting
- Chronic severe diarrhoea
- Persistent right upper or right lower quadrant pain
- Unexplained fever
- Family history of inflammatory bowel disease, or
- Localised tenderness in the right upper or right lower quadrants,
- Localised fullness or mass effect
- Hepatomegaly
- Splenomegaly
- Costovertebral angle tenderness
- Tenderness over the spine, and
- Perianal abnormalities

Note: Abnormal or unexplained physical findings is generally an indication to pursue diagnostic testing for specific anatomic, infectious, inflammatory, or metabolic etiologies on the basis of specific symptoms in an individual case. Significant vomiting includes bilious emesis, protracted vomiting, cyclical vomiting, or a pattern worrisome to the physician.
intestinal disorders (FGIDs) in children (Table 1). FAPS is one of the FGIDs and is distinct from other categories of FGIDs such as irritable bowel syndrome (IBS) and functional dyspepsia. FAPS commonly is associated with a tendency to experience and report other somatic symptoms of discomfort, including chronic pain thought to be related to the gynaecologic or urinary systems.

**Clinical evaluation**

The most crucial part of the clinical evaluation of any child with chronic abdominal pain is a thorough history and a detailed clinical examination.

In almost all cases of FAPS, clinical examination will be normal and no presence of any alarm symptoms or signs. If this is so, there is no need for any routine diagnostic or screening tests. In contrast, the presence of alarm symptoms or signs (Table 2) may suggest a higher likelihood of organic disease and this is an indication for the performance of diagnostic tests and/or referral to a paediatric specialist, whereas in the absence of alarm symptoms, diagnostic studies are unlikely to have a significant yield of organic disease.

Functional abdominal pain generally can be diagnosed correctly by the primary care clinician in children 4 to 18 years of age with chronic abdominal pain when there are no alarm symptoms or signs and the physical examination is normal, without the requirement of additional diagnostic evaluation.

In reality, testing may also be performed to reassure the patient, parent, and physician of the absence of organic disease, particularly if the pain significantly diminishes the quality of life of the patient. However, this should try to be avoided and not done routinely but only after the patient and the parents have been adequately counselled about FAPS and still fail to be reassured.

**Management**

Education of the child and the family is an important part of treatment of the child with functional abdominal pain. It is often helpful to summarise the child’s symptoms and explain in simple language that although the pain is real, there is most likely no underlying serious or chronic disease. It may be helpful to explain that chronic abdominal pain is a common symptom in children and adolescents, yet few have a disease.

It is important to provide clear and age-appropriate examples of conditions associated with hyperalgesia, such as a healing scar, and manifestations of the interaction between brain and gut, such as the diarrhoea or vomiting children may experience during stressful situations (e.g. before school examinations or important sports competitions).

It is recommended that reasonable treatment goals be established, with the main aim being the return to normal function rather than the complete disappearance of pain.

Medications for functional abdominal pain syndrome are best prescribed judiciously as part of a multifaceted, individualised approach to relieve symptoms and disability. It is reasonable to consider the time-limited use of medications that might help to decrease the frequency or severity of symptoms, though there is a paucity of evidence in the medical literature to support this. Any benefit is most likely due to a placebo effect.

The only intervention of proven benefit is the biopsychosocial model of care.8,9

As such, in refractory cases despite normal clinical examination and absence of any alarm signals, and clear explanation and reassurance by the GP, referral to a clinical psychologist for cognitive behaviour therapy (CBT) has been shown to be of benefit.

**Summary**

- Chronic abdominal pain is a very common cause for seeing a GP.
- The majority of cases are due to FAPS.
- In the context of a typical history and absence of any alarm signs and symptoms, no further diagnostic testing is usually needed.
- Mainstay of management is adequate explanation and reassurance by the attending doctor.
- For recalcitrant cases, referral to a clinical psychologist for CBT may be warranted.

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**GP CONTACT**

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

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**References**

Paediatrics and Prevention – 
The New Oral Health Recommendations for Children
Dr Tan Wee Kiat, Head and Senior Consultant, Paediatric Dentistry Unit, Department of Restorative Dentistry, National Dental Centre of Singapore

Over the past few years, there has been intensified interest in the oral health recommendations issued by the American Academy of Paediatric Dentistry (AAPD) and echoed by the American Academy of Paediatrics (AAP). Two policy statements made in 2005 and 2007 respectively were:

1. That by age 1, the child should have an established dental 'home'. Dental home is defined as the ongoing relationship between the dentist and the patient, inclusive of all aspects of oral health care delivered in a comprehensive, continuously accessible, coordinated and family-centred way. The parallel to this in the medical fraternity would be the family physician.

2. That the child's first oral health assessment should be at age 1 year.

The impetus for these policies came from an unabated high prevalence of an aggressive form of decay affecting children below the age of 6 years in America. The disease came to be known as Early Childhood Caries (ECC). In 2000, the US Surgeon General declared caries as the most common chronic disease affecting childhood, five times more common than asthma, and reaching epidemic proportions.

What about Singapore?
Our situation in Singapore is not far different from America. A 2003 national study of our school children show only 52% of children caries-free at age 6 years, with 20% of this group having as much as four teeth (one fifth of their dentition) decayed. In fact, in a separate study, 40% of children below 5 years were affected by ECC. This is a lot of disease to treat in a very young child.

Increasingly, the evidence shows that the earlier parents bring their child for an oral health assessment, the better the chances of preventing ECC.

Where previously we believed in the age 3 years first dental visit (because we thought that was an age where a child would be socially adept in a dental surrounding), we see that even at this age, a large proportion of children are already affected with ECC, and little prevention could be done. Hence the new revisions by the Academy.

Caries as an infective disease
Evidence now tells us that caries is in effect a transmittable bacterial infection. Streptococcus mutans, is transmitted from parent or caregiver to infant through acts like sharing food and eating utensils. The window period of infectivity can start as early as 3 months of age. The earlier the infant is affected, the higher
the risk of developing ECC. Mothers/caregivers who have poor oral health are more likely to harbour strep. mutans.

Where do we go from here?
We need to educate and deliver these messages of the age 1 first dental visit, and the need for parents to model the correct dental behaviours for their children. The messages we have been giving are old and out of date.

This educational front can be helmed by dentists but without the collaboration from medical colleagues – family physicians, paediatricians and nursing personnel in family clinics, it will not take off. A conjoint effort between the AAP and the AAPD in the advocacy of child oral health was started in 1999 when the AAP included a section of Oral health in the specialty guidelines. There is no such effort in Singapore currently.

In February 2012, the Paediatric Dentistry Unit of the National Dental Centre Singapore (NDCS) started an outreach programme to train nurses and doctors in polyclinics to identify risk of ECC in the young children coming for developmental assessment, and to refer them to us.

The programme was started here because family, maternal and child health clinics are the site where parents bring their infants for vaccinations and health assessment. We have trained 200 staff but this movement has yet to grow in momentum. Part of the difficulty is a lack of willingness of medical personnel to come on board, or a lack of time.

What can medical practitioners do?
Paediatricians and medical GPs who come across patients aged 1 year old, with at least one erupted tooth should recommend them for early oral health assessment. Be aware that just as there are recommended ages for first assessment of different organ systems e.g. visual testing, there is now a new recommendation for the first dental assessment at age 1 year.

There is much to be done in the field of education, training and multidisciplinary collaborations, but we have to take our head like the proverbial ostrich, out from the sand. ECC is a serious problem which consumes our healthcare resources.

Children with ECC carry the same high risk to their permanent teeth. Our future generation can grow up caries free. There can be geriatrics who do not need dentures and complex dental work, but only if we start our children early on the road to dental health.

GP CONTACT
GPs can call for appointments through the Specialist Outpatient Clinic at 6324 8798.

References
Liver Metastases from Colorectal Cancer: Surgery for Cure

Dr Chan Chung Yip, Consultant, Department of General Surgery, Singapore General Hospital

A recent case
Mr LK is a 55-year-old gentleman who presented with intestinal obstruction secondary to a cancer in the sigmoid colon. A pre-operative CT scan also revealed presence of three foci of liver metastases. A high anterior resection with defunctioning colostomy was performed and histology confirmed adenocarcinoma pT3N0. He recovered well post-operatively and was managed for synchronous colorectal liver metastases that were deemed resectable.

It was decided that he should receive a ‘sandwich’ regime with three months of chemotherapy, followed by surgery, and then another three months of chemotherapy. He tolerated the initial chemotherapy well with reduction in size of the liver metastases. He then underwent the liver resection together with closure of the defunctioning colostomy, and all three foci of metastases were resected completely.

Post-liver resection, the recovery was uneventful and he completed his remaining cycles of chemotherapy. Histology of the resected liver confirmed metastatic adenocarcinoma with negative margins. It is now a year since the liver resection and he has been disease-free.

Introduction
The prognosis of Stage 4 colorectal cancer with metastasis to the liver is much improved with contemporary chemotherapy together with liver resection. A quarter of colorectal cancer patients present with synchronous liver metastasis at first diagnosis. A subsequent 30% will develop metachronous disease following colorectal surgery.

Modern chemotherapy is highly effective in prolonging the life of patients with colorectal cancer liver metastasis. However, with chemotherapy alone, very few patients with Stage 4 colorectal cancer survive beyond three years from their diagnosis of metastatic cancer. Liver resection is feasible in about 20% of these cases, and in combination with chemotherapy, offers the best chance for long-term survival and cure.

Indications for hepatectomy
The aim of hepatectomy is ‘intention to cure’. Over the years, the indication for liver resection for colorectal liver metastasis has greatly expanded such that the emphasis is on ‘who is not resectable’ as opposed to the previous paradigm of ‘who is resectable’. No longer is the selection criteria based on size, number and distribution of the liver metastases alone.

In essence, hepatectomy can be considered if the primary disease is controllable, where there is absence of extra-hepatic disease or if present, the disease is limited and amenable to surgery or ablation, and with sufficient functional liver remnant following the planned resection of all cancer bearing areas in the liver.

Pre-operative management
The management of patients with colorectal liver metastasis is complex and often requires inputs from surgeons, oncologists and radiologists.

In Singapore General Hospital, these patients are discussed and managed by a multidisciplinary team to formulate the best strategy tailored for the individual. Besides the routine CT scan, MRI and PET scans may be performed to determine resectability.

Depending on the clinical presentation, disease burden and control, hepatectomy can be performed before institution of chemotherapy (adjuvant chemotherapy), in between rounds of chemotherapy, or at the completion of the chemotherapy regime (neoadjuvant chemotherapy).

In the latter two situations, it is usual to wait four to six weeks for the hepatotoxic effects of the chemotherapy to wash out before surgery is undertaken. When the liver metastases presents synchronously with the primary colorectal cancer, and is deemed resectable, further options include combined one-stage resection, staged primary resection before instituting chemotherapy, or even a liver-first approach whereby the hepatectomy is undertaken before the colorectal surgery.

Often the liver metastases is too extensive to be amenable to resection. With multi-
agent chemotherapy, some of such cases can be down-staged sufficiently and converted to resectability. In some cases, the limitation to liver resection may be because of insufficient liver remnant. Pre-operative portal vein embolisation is one strategy to circumvent this problem. The target of the embolisation is the lobe of the liver to be resected so as to encourage hypertrophy of the contralateral remnant liver.

Another strategy is a staged liver resection whereby the cancer-bearing areas are removed in a stepwise fashion over two separate surgeries so as to allow the liver to regenerate in between the two surgeries. A further strategy is to combine resection with intra-operative ablation of small tumours in order to preserve liver parenchyma.

**Conduct and risk of the surgery**

Traditionally, hepatectomy is carried out as an open surgery with a long abdominal incision. Increasingly, laparoscopic resections are performed, achieving results similar to that of open surgery with the added advantage of lesser pain and faster recovery. Minimally invasive surgery is particularly attractive when both liver and colorectal resections are carried out in this manner as this would otherwise entail an even larger incision in order to access both the upper and lower abdomen where these organs are located respectively.

All hepatectomies are major surgeries. However, the complication rates have fallen dramatically over the years with better surgical techniques and instruments, as well as perioperative anaesthetic and nursing care. The main surgical risks are massive bleeding, bile leakage and infection, liver failure and death. Nonetheless, liver surgery is relatively safe, and the risk of death from the surgical procedure is less than five percent in specialised liver units such as ours.

Post-operatively, most routine cases do not require ICU care, but are usually nursed in the high dependency ward for a couple of days. The estimated length of stay in hospital following liver resection is five to seven days.

**What are the alternatives to surgery?**

Surgery provides the best chance for lasting survival and cure of the cancer. In some cases, local ablation of the cancer may be undertaken when the surgical or anaesthetic risks are prohibitive, in the interest of parenchymal preservation or in combination with surgery to tackle all cancer-bearing areas.

**What determines the risk of recurrence and what is the prognosis?**

Factors that determine recurrence following hepatectomy includes the stage of the primary colorectal cancer, timing of the presentation of liver metastases, size and number of liver metastases, surgical margins and response to chemotherapy.

In some cases, a second or even third hepatectomy can be undertaken with the same considerations and indications as the first resection with equivalent long-term survival rates. Five-year survival following hepatectomy is approaching 50% and ten-year survival is close to 30%. A patient who is recurrence-free for ten years after the liver surgery is considered cured of the cancer.

**Management of the Colorectal Liver Metastasis patient at the GP clinic**

You may encounter patients who have undergone recent liver surgery for colorectal liver metastasis. The patient will most likely be visiting you for removal of the skin staples. Whilst most will have healed by the scheduled STO date, issues pertaining to surgical wound include superficial wound infection and dehiscence. These can be managed with simple wound care and dressings.

However, symptoms such abdominal pain and fever may arise from an intra-abdominal infection and these patients should be referred back to the hospital. Jaundice, abdominal distension secondary to ascites and confusion might indicate liver decompensation and should similarly be referred back to the hospital urgently.

**GP CONTACT**

GPs can call for appointments through the Specialist Outpatient Clinic at 6321 4402.
Races to watch
Ethnic variation in post-angioplasty outcomes revealed

While optimal pharmacological therapy is the backbone of treatment for coronary artery disease, percutaneous coronary intervention (PCI) or angioplasty, plays a critical adjunct role as it relieves acute and chronic symptoms. In an ideal situation, the outcomes of PCI should be reproducible in any patient, regardless of age, gender or ethnicity.

But a local large-scale study conducted by doctors from National Heart Centre Singapore (NHCS) has revealed that Indian and Malay patients are at greater risk of a major adverse cardiac event within six months after PCI compared to their Chinese counterparts. The study, believed to be the first of its size in Asians, was published in BMC Cardiovascular Disorders recently.

“This is an important finding. We hope it will increase awareness of the inherent disparities in clinical outcome among the three major racial groups in physicians who manage patients with coronary artery disease,” said the lead author of the study, Dr Angela Koh, Associate Consultant, Department of Cardiology, NHCS.

The study shows that Indian and Malay patients who have undergone PCI are more likely to have repeat revascularisation or suffer from myocardial infarction within six months after the procedure. A higher mortality rate is also seen in Indian patients within the same timeframe. Although these subpopulations are known to be more susceptible to cardiovascular risk factors such as diabetes, the higher adverse event rates among them could not be explained on the basis of co-morbidities alone.

The cause for this disparity remains unknown, but may lie in inherent biological responses to contemporary drugs, different rates of disease progression or perhaps, lifestyle and behavioural differences. Whatever the cause, the ethnic disparity in the outcomes of PCI implies the need for more vigilant follow-up.

“Primary care health professionals are best placed to be the eyes and ears to observe factors that may trigger adverse events. Besides ensuring drug compliance and advocating lifestyle and behavioural modifications, they can detect changes in patients’ conditions more readily and provide timely feedback for appropriate intervention as well as informed future research,” said Dr Koh.

Indian and Malay patients are at greater risk of a major adverse cardiac event within six months after PCI compared to their Chinese counterparts.

- Dr Angela Koh
NHCS Develops World’s First Human Heart Cell Model

Researchers at the National Heart Centre Singapore (NHCS) have successfully created a human heart cell model of arrhythmogenic right ventricular cardiomyopathy (ARVC), an inherited heart muscle disorder which puts one at high risk of developing life-threatening arrhythmias and sudden cardiac death.

How it was developed
The human heart cell model was developed using patient-specific induced pluripotent stem cell (iPSC) technology which converts skin samples from an ARVC patient into heart muscle cells on a petri dish outside the body. This technique is based on the revolutionary iPSC technology of transforming skin cells into stem cells, developed by Professor Shinya Yamanaka, winner of the 2012 Nobel Prize in Physiology/Medicine.

Through the study, NHCS research team discovered that key characteristics of the disease, such as abnormal “fatty changes” and altered distribution of proteins involved in cell-cell connections (called desmosomal proteins) are reproduced in the heart cells. This novel cellular model for studying the disease could help to improve understanding on how these mutations lead to arrhythmias and clinical manifestations of ARVC.

“There would be significant opportunities now to safely study the effects of environmental factors and treatments, including gene and drug therapy, on such diseases as they do not have to be tested on patients in the first instance,” says Associate Professor Philip Wong, Director, Research and Development Unit, NHCS.

Genetic mutations in ARVC typically affect the function of desmosomes, which are structures that attach heart muscle cells to one another. Desmosomes provide strength to the heart muscle and play a signalling role between neighbouring cells. Without normal desmosomes, the heart muscle cells will detach from one another and die, particularly when the heart muscle is placed under stress (such as during vigorous exercise). The damaged heart muscle is gradually replaced by fat and scar tissue. These changes also disrupt the electrical signals that control the heartbeat, which can lead to dangerous arrhythmia and sudden cardiac death.

Symptoms of ARVC
Although ARVC is a rare condition, occurring in an estimated 1 in 2,000 to 1 in 5,000 people, it is more commonly detected and more lethal in younger individuals in their 20s and 30s, particularly in males. However, the disorder may be under-diagnosed as it can be difficult to detect in people with mild or no symptoms. ARVC may not have any symptoms especially in the early stages but if they do occur, common symptoms include palpitations, light-headedness and fainting. Those with family history of sudden cardiac death are at higher risk.

Going forward
The team has also been successful in using the iPSC technology to replicate other inherited heart rhythm diseases such as long QT syndrome (LQTS) and Brugada Syndrome.

“The next stage is for us to use this ARVC model to understand more about the disease and to specifically use such models to risk stratify patients with risk of cardiac arrhythmias. Such models will allow us to measure risk in individuals safely and tailor individual preventive programmes and treatments to patients in a more precise manner, i.e. the practice of ‘stratified and personalised’ medicine,” said Associate Professor Wong.

The study, the first of its kind in the world, was published in the European Heart Journal, a top-ranking international peer-reviewed journal, in July 2012. The three-year project which started in 2010 was supported with a research grant from Goh Foundation and administered through Duke-NUS.

CONTACT NHCS
GP Appointment Hotline
Tel: 6436 7848
Email: central.appt@nhcs.com.sg
General Enquiries
Tel: 6436 7800
Age-friendly Features at NHCS New Building
For Rising Number of Elderly Patients

The National Heart Centre Singapore (NHCS) has integrated various age-friendly features into the design of its new building to better serve its increasing number of elderly patients. In 2011, NHCS saw more than 5,500 of patients aged 65 and above seeking first-time consultation, a 44% rise, compared to 2002. These age-friendly features are based on key aspects of safety, accessibility, comfort, way-finding and efficiency.

Age-friendly features
Besides their medical conditions, elderly patients also suffer from physical weakness and reduced visual, hearing, and cognitive acuity. Age-friendly features are hence essential in creating a pleasant patient care experience for the elderly.

The building layout has been carefully planned with the elderly patient in mind. Key clinical services commonly needed by the patients have been identified and arranged adjacent to each other so that patients do not need to travel to different floors for these services. For example, an elderly patient can have his blood test and ECG done on the same floor before seeing the doctor at the clinic.

Other age-friendly features include non-slip handrails, non-slip vinyl flooring, distinctly-coloured signs with large font, arm rests on seats in waiting areas, consistent lighting throughout the building, and pockets of greenery to reinforce the therapeutic healing touch.

Seamless wheelchair accessibility
The whole building has also been designed to be wheelchair accessible. Each registration and payment counter at the NHCS new building will have a lower counter recessed at the bottom for wheelchair users and a higher one for standing caregivers (Figure 1).

As many of the elderly are unable to lift their arms above shoulder height, and those in wheelchairs are unable to reach for most light and door switches, motion sensor activated lights and automated doors will be widely used. To meet their needs, motion sensor activated lights and automated doors are widely used. Most wheelchair accessible washrooms will also have semi-automatic sliding doors, as opposed to conventional swing doors, to provide ease of access.

NHCS had invited Dr Emi Kiyota, President of Ibasho, a respected environmental gerontologist, to appraise the age-friendliness of its new building plans.

To better empathise the challenges faced by the elderly, NHCS had arranged for the building architects to go through an age-friendly workshop conducted by Dr Kiyota. During the workshop, they put on dark tinted shades, acoustic ear muffs, latex gloves, and tight bandages on their elbows to simulate the deterioration of physical functions experienced by the elderly and were asked to carry out simple tasks such as form filling and picking up dropped items. The experiential learning allowed the architects to have a unique ‘insider’ perspective in designing the building to better meet the needs of the elderly patients.

NHCS saw about 108,000 outpatients last year, and will double its clinic capacity to 38 at the new building to meeting the growing number of heart patients. The 12-storey NHCS new building, which has a floor area of 48,000m², will be ready by end-2013.

Figure 1
Registration and payment counters for wheelchair users and caregivers.

CONTACT NHCS
GP Appointment Hotline
Tel: 6436 7848
Email: central.appt@nhcs.com.sg
General Enquiries
Tel: 6436 7800
Inaugural SingHealth GP Symposium

Providing integrated and holistic healthcare and striving to always provide the right care in the right setting, while allowing for a seamless transitions between various medical professionals, so that we can provide efficient and effective medical care that translated to better patient outcomes – this is a fundamental guiding principle at SingHealth.

Reflecting this guiding principle was the inaugural SingHealth GP Symposium where speakers comprising of specialists in their respective fields shared their experiences in managing functional disorders of the gastrointestinal and urogynaecological systems.

Held on 20 October 2012 at the Mandarin Orchard Hotel, the Symposium centred on the theme of The Dysfunctional Human Body which highlighted common but often neglected or mismanaged medical conditions.

Some of the conditions discussed were part of a wider spectrum of Pelvic Floor Disorders, which comprise a myriad of conditions arising from weakness of the muscles of the pelvic floor.

Patients often present with troubling symptoms like refractory constipation, urinary incontinence and pelvic organ (i.e. womb, bladder, rectal) prolapse. Together with Irritable Bowel Syndrome, these potentially debilitating conditions are often overlooked and inadequately managed. Compounded by a lack of awareness regarding available treatment options, the often associated embarrassment and fear of stigmatisation lead many affected individuals to suffer in silence.

The topics discussed that afternoon included:

- Surgery for Constipation and Rectal Prolapse
  by Dr Mark Wong, Consultant, Dept of Colorectal Surgery, SGH

- New developments in Irritable Bowel Syndrome
  by Dr Vikneswaran, Consultant, Dept of Gastroenterology, SGH

- Urinary Incontinence – Causes and Treatment Options
  by Dr Lee Lui Shiong, Associate Consultant, Dept of Urology, SGH

- Important Considerations in Managing Women with Pelvic Organ Prolapse
  by Dr Chua Hong Liang, Senior Consultant, Dept of O&G, SGH

To round off the series of presentations, GPs brought up common clinical problems faced in their day-to-day practice and specialists offered expert advice in a highly interactive discussion during the Q&A session.

As the nation’s flagship hospital with over 7,000 medical professionals, SGH is well-positioned to provide the latest multidisciplinary care for all patients. With GPs at the frontline of our healthcare system, it is paramount for both groups to work together to provide the best care for patients.

As CMEs are the backbone of the medical profession, we are committed to keeping GPs abreast of the latest medical technology, healthcare trends and treatment modalities through more such events.
### Singapore General Hospital

**GP Hotline:** 6321 4402, **Email:** appointments@sgh.com.sg

#### Appointments

- **Dr Cheng Tim-Ee Lionel**
  - Associate Consultant
  - Dept: Diagnostic Radiology
  - Sub-specialty: Thoracic, Abdominal and Pelvic Imaging

- **Dr Ho Chia Ming**
  - Associate Consultant
  - Dept: Diagnostic Radiology

- **Dr Faraz Zarisfi**
  - Associate Consultant
  - Dept: Emergency Medicine

- **Dr Andrew Samuel Ing**
  - Associate Consultant
  - Dept: Internal Medicine

- **Dr Therese Sophie Laperre Stevens**
  - Associate Consultant
  - Dept: Respiratory & Critical Care
  - Sub-specialty: Chronic Obstructive Pulmonary Disease (COPD)

#### Promotions, Senior Consultants

- **Dr Teo Li-Ming**
  - Senior Consultant
  - Dept: Anaesthesiology
  - Sub-specialty: Liver Transplant

- **Dr Chng Soke Miang**
  - Senior Consultant
  - Dept: Diagnostic Radiology

- **Dr Tham Kwang Wei**
  - Senior Consultant
  - Dept: Endocrinology
  - Sub-specialty: Obesity, Lipids, General Endocrinology

- **Dr Low Guek Hong Jenny**
  - Senior Consultant
  - Dept: Infectious Diseases
  - Sub-specialty: General Internal Medicine, Infectious Diseases

- **Dr Lim Kiat Hon**
  - Senior Consultant
  - Dept: Pathology
  - Sub-specialty: Histopathology, Cytology

- **Dr Yuen Shyi Peng John**
  - Senior Consultant
  - Dept: Urology
  - Sub-specialty: Benign Prostatic Hyperplasia, Laparoscopic Surgery, Uro-Oncology, Brachytherapy
## Promotions, Consultants

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<td>Dr Yeow Tow Non</td>
<td>Consultant</td>
<td>Dept</td>
<td>Diagnostic Radiology</td>
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<td>Dr Chan Kim Poh</td>
<td>Consultant</td>
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<td>Emergency Medicine, Trauma</td>
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<td>Dr Wee Choon Peng Jeremy</td>
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<td>Dr Daphne Tan Su-Lyn</td>
<td>Consultant</td>
<td>Dept</td>
<td>Endocrinology, Young Adults with Diabetes, Type 1 Diabetes</td>
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<td>Dr Wang Yu Tien</td>
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<td>Gastroenterology &amp; Hepatology</td>
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<td>Dr Chew Ee Ming Darryl</td>
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<td>Hand Surgery, Microvascular Reconstruction, Paediatric Hand Surgery</td>
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<td>Dr Low Chyi Yeu David</td>
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<td>Dept</td>
<td>Neurosurgery, Paediatric Neurosurgery, Neuro-Oncology</td>
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<td>Dr Sumbul Zaheer</td>
<td>Consultant</td>
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<td>Nuclear Medicine &amp; PET</td>
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<td>Dr Yung Chuan Sean</td>
<td>Consultant</td>
<td>Dept</td>
<td>Orthopaedic Surgery, General Hand Surgery</td>
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<td>Dr Ashfaq Ahmed Larik</td>
<td>Consultant</td>
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<td>Rehabilitation Medicine, General Rehabilitation</td>
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<td>Dr Manish Kaushik</td>
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<td>Dr Sathiyamoorthy Selvarajan</td>
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<td>Pathology, Histopathology, Cytology</td>
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<td>Dr Lee Lui Shiong</td>
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<td>Dr Tan York Kiat</td>
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**Appointments**
Promotions, Associate Consultants

Dr Sohil Equbal Pothiawala  
Associate Consultant  
Dept Emergency Medicine  
Sub-specialty Critical Care, Disaster Medicine

Dr Lee Ming  
Associate Consultant  
Dept Pathology

Dr Chui Hoe Kong Christopher  
Associate Consultant  
Dept Plastic, Reconstructive & Aesthetic Surgery  
Sub-specialty Reconstructive Microsurgery, Aesthetic

Dr Goh Sin Yee  
Associate Consultant  
Dept Anaesthesiology

Dr Ho Vui Kian  
Associate Consultant  
Dept Anaesthesiology

Dr Tan Pei Yu  
Associate Consultant  
Dept Anaesthesiology

Dr Thong Sze Ying  
Associate Consultant  
Dept Anaesthesiology

Dr Lim Chin Siah  
Associate Consultant  
Dept Emergency Medicine

Dr Tan Boon Kiat Kenneth  
Associate Consultant  
Dept Emergency Medicine

Dr Rajneesh Kumar  
Associate Consultant  
Dept Gastroenterology & Hepatology

Dr Chien Mei Fong Jaime  
Associate Consultant  
Dept Infectious Diseases

Dr Qin Yan  
Associate Consultant  
Dept Internal Medicine

Dr Kuo Li Chuen Tricia  
Associate Consultant  
Dept Urology

KK Women’s and Children’s Hospital  
Appt Hotline: 6294 4050, Email: centralappt@kkh.com.sg

Appointments

Dr Lim Swee Ho  
Consultant  
Dept Breast Department

Dr Loh Yee Jim  
Consultant  
Dept Cardiothoracic Surgery Service

Dr Radha Srikanth  
Consultant  
Dept Psychological Medicine/Child Development

Dr Veena Rajkumar  
Associate Consultant  
Dept Paediatrics
## Promotions, Senior Consultants

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<th>Dr Tang Phua Hwee</th>
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<th>Dr Narasimhan Kannan Laksmi</th>
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<th>Dr Farida Binte Ithnin</th>
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<td>Paediatric Subspecialties (Cardiology Service)</td>
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<th>Dr Veronique Celine Viardot-Foucault</th>
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## Promotions, Associate Consultants

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<td>Dept</td>
<td>Paediatrics (Respiratory Medicine Service)</td>
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<table>
<thead>
<tr>
<th>Dr Tan Yi Shuen Tracy</th>
<th>Associate Consultant</th>
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<tr>
<td>Dept</td>
<td>Paediatric Anaesthesia</td>
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<tr>
<th>Dr Tan Hung Tiong Justin</th>
<th>Associate Consultant</th>
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<tr>
<td>Dept</td>
<td>Paediatric Subspecialties (Rheumatology &amp; Immunology Service)</td>
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</table>
**New Appointment**

**Dr Chng Chai Kiat**
Head, Dental Service; Consultant
Dept Dental Service

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**National Heart Centre Singapore**
GP Hotline: 6436 7848, Email: central.appt@nhcs.com.sg

**Appointment**

**Prof Stuart Cook**
Distinguished Clinician Scientist
Senior Consultant in Clinical and Molecular Cardiology
Senior Research Advisor
Dept Cardiology
Sub-specialty Cardiac Magnetic Resonance Imaging

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**National Neuroscience Institute**
GP Hotline: 6357 7095, Email: da_neuroscience@nni.com.sg

**New Appointment**

**Dr Sitoh Yih Yian**
Deputy Director, NNI; Senior Consultant
Dept Neuroradiology
Sub-specialty Diagnostic Neuroradiology

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**New Appointment**

**A/Prof Lim Chong Hee**
Adjunct Associate Professor (Duke-NUS Graduate Medical School); Senior Consultant
Dept Cardiothoracic Surgery
Sub-specialty Cardiac Surgery (Adult), Heart/Lung Transplantation, Mechanical Heart Device, Thoracic Surgery
4th EMG-EEG Autonomic Workshop

This teaching workshop focuses on the principles and practice of electrodiagnosis, the interpretation of electroencephalography (EEG) and autonomic function tests. This year we have added additional sessions on diagnostic imaging of PNS, using MRI and ultrasound.

All sessions will be interactive, offering participants ample opportunities to interact real time with tutors and patients. Participants will also receive a comprehensive syllabus detailing the theoretical basis of the techniques demonstrated.

Workshop highlights
Special focus - Neuromuscular Ultrasound and MR Imaging of Peripheral Nerves
EMG - Blink Reflex, Brachial Plexopathy, Carpal Tunnel Syndrome and more
EEG - Recognising Seizure Phenomenology, Normal Variants and more
AFT - Demonstration Parasympathetic Autonomic tests and more

7th Gynaecological & Early Pregnancy Ultrasound Workshop

The workshop will offer an understanding of ultrasound physics, its technology and teach the basic skills to perform and interpret the images with emphasis on first trimester pregnancy failure.

Topics include:
- Practical guidelines in the diagnosis of pregnancy failure
- Classification of miscarriage by ultrasound
- Ectopic pregnancy as well as normal
- Abnormal variations observed during first trimester

A sonographic approach to endometrial diagnosis and practical guide to the diagnosis and management of adnexal pathology is also included.

Date
16 March 2013, Saturday

Time
8.45 am – 4 pm

Venue
TTSH Theatrette (Level 1)
Tan Tock Seng Hospital

CME Points
Application in process

Fees

<table>
<thead>
<tr>
<th></th>
<th>Day 1 (1 March)</th>
<th>Day 3 (3 March)</th>
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<tbody>
<tr>
<td>AFT Session Only</td>
<td>$100.00 per session</td>
<td>Doctor $200.00</td>
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<tr>
<td>EEQ Session Only</td>
<td>$75.00 per session</td>
<td>Technician $125.00</td>
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<tr>
<td>Imaging Session Only</td>
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Full 3 Days Registration (1 – 3 March 2013)

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<tbody>
<tr>
<td>Doctor</td>
<td>$450.00</td>
</tr>
<tr>
<td>Technician</td>
<td>$200.00</td>
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</tbody>
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Contact
The NNI Secretariat
Tel: 6357 7152 / 6357 7163
Fax: 6256 4755
Email: nni_secretariat@nni.com.sg

Registrations by 18 Feb 2013.
Visit www.nni.com.sg to download the registration form.
Updates in Plastic, Reconstructive & Aesthetic Surgery

Participants will have a hands-on session on dressings and basic suturing techniques in this talk organised by the Department of Plastic, Reconstructive & Aesthetic Surgery of SGH.

Topics include:
- Common indications for referral to a plastic surgeon
- Skin cancers: Identification and management
- Burns and other wound care in a GP clinic setting
- Breast augmentation – Is fat transfer safe?
- Basic suturing techniques

Date
23 March 2013, Saturday

Time
1 pm – 3.45 pm

Venue
SGH Postgraduate Medical Institute
Block 6, Level 1

CME Points
Application in process

Fees
Free

Contact
SGH Post Graduate Medical Institute
Tel: 6326 5284
Fax: 6223 9789
Email: pgmi.gpcme@sgh.com.sg

Registrations by 22 Mar 2013.
Pre-registration is required. Unless otherwise notified, all registrations received will be deemed as confirmed.

3rd Singapore International Neurocognitive Symposium
Dementia across the Spectrum of Care

Date
5 – 6 April 2013
(Friday to Saturday)

Venue
Hilton Hotel Singapore

CME Points
Application in process

Fees
Delegates (Doctors)
$300 (before 4 March)
$350 (after 4 March)

Trainees, Nurses,
Allied Health Professionals
$240 (before 4 March)
$270 (after 4 March)

Breakfast Symposium: Interactive Clinical Case Discussions with the Experts – $90

Contact
The NNI Secretariat
Tel: 6357 7152 / 6357 7163
Fax: 6256 4755
Email: nni_secretariat@nni.com.sg

Registration is required.
For more information and updates on details of the Symposium, log on to www.nni.com.sg.
GP Forum for Paediatric Health 2013

This forum for healthcare professionals will cover paediatric health issues including:

- Abdominal pain in infants and children
- The surgical management of paediatric obstructive sleep apnoea
- Pain management in children
- Testicular conditions: The undescended testis and testicular pain

Date
6 April 2013, Saturday

Time
1 pm – 5 pm

Venue
KKH Auditorium
Level 1, Women’s Tower

CME Points
Application in process

Fees
Free
(Refreshments will be provided)

Contact
Tel: 6394 8746
(Monday to Friday, 8.30 am – 5.30 pm)

Registration is required.
For more information, log on to www.kkh.com.sg.

To register via email, please email your full name, organisation, MCR number, contact number, email and postal address to marcoms@kkh.com.sg. Please also specify if you are a General Practitioner, Paediatrician or other types of specialists.

Seats are confirmed on a first-come-first-served basis.

Caring for Cancer in the Community
1st NCCS GP Symposium 2013

The field of oncology has changed dramatically in the last two decades. Exponential progress made in both diagnostics and therapeutics has translated into significantly improved survival and quality of life for cancer patients.

Now, more than ever, the primary care physician plays a key role in the holistic and chronic care of patients afflicted with malignancy.

In this exciting symposium, NCCS specialists will share with you the latest evidence and best practices in the shared care of cancer patients.

Date
20 April 2013, Saturday

Time
12.30 pm – 5 pm
*Lunch from 12.30 pm onwards

Venue
Peter & Mary Fu Auditorium
Level 4, National Cancer Centre Singapore

Fees
Free

Contact
Post Graduate Education Unit
Tel: 6376 3643 / 6236 9425 / 6236 9423
(Monday to Friday, 9 am – 6 pm)

Registration is required.
To register via email, please email your full name, organisation, MCR number, designation, phone, email and postal address to marcoms@kkh.com.sg.

PROGRAMME

• Treating Cancer in the Genomic Era:
  Has the Science Obscured the Art? by Prof Koo Wen Hsin
  Deputy Director, NCCS
  Senior Consultant, Dept of Medical Oncology

• Cancer Prevention – What We Know, What We Don’t Know and Everything in Between by Dr Choo Su Pin
  Senior Consultant, Dept of Medical Oncology

• To (T)est, or not to (T)est, That is the Question: Promises and Pitfalls in Cancer Screening by Dr Raymond Ng
  Senior Consultant, Dept of Medical Oncology

• Evaluating a Cancer Patient’s Symptomology – What Every GP Needs to Know by Prof Simon Ong
  Director, Cancer Education
  Senior Consultant, Dept of Medical Oncology

• Telling Your HCAs From Your SCSs – the Ecosystem for Public Cancer Care in Singapore by Dr Grace Yang
  Registrar, Dept of Palliative Medicine
SingHealth is the largest not-for-profit public Academic Healthcare Cluster in Singapore. We have two acute hospitals and five centres of excellence operating 2,500 beds within the group. We also operate primary care and intermediate care facilities. We offer a comprehensive range of multidisciplinary and integrated healthcare services with 43 specialties across the group. Our institutions are renowned regionally as referral centres for complex medical cases and provide a wide spectrum of medical treatment options.

Amongst our expansion plans is a new 1,400-bed acute and intermediate care hospital which will be completed in 2017. 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, FRCP, FRCA or its equivalent in its relevant discipline*
- Completed specialty training in Respiratory Medicine 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:

**The Director, Medical Manpower (MN1210)**
Singapore Health Services Pte Ltd
168 Jalan Bukit Merah, Surbana One,
#17-01, Singapore 150168

**Fax**
+65 6377 4208

**E-mail**
med_career@singhealth.com.sg

(Only shortlisted candidates will be notified.)
EATING DISORDERS
PUBLIC FORUM

As part of the Eating Disorders Awareness Week (EDAW), the SGH Eating Disorders team will be organising a public forum targeting the general public, themed ‘You are worth more than what you weigh’.

The forum aims to help the public understand that size and shape, or the number on the scale does not define an individual.

EDAW is a collective effort of eating disorder professionals, healthcare providers, students, educators, social workers, and individuals committed to raising awareness of the dangers surrounding eating disorders.

The aim of EDAW is to ultimately prevent eating disorders and body image issues while reducing the stigma surrounding eating disorders and improving access to treatment. It is celebrated internationally during the last week of February every year.

When
2 March 2013, Saturday
9.30 am – 12.30 pm

Where
NTUC @ One Marina Boulevard Room 701
(Raffles MRT Exit J)

Fees
$5 (pre-registration)
$8 (same day registration)

*For more info, call Ms Raji at 6327 9879 or email ed.publicforum@sgh.com.sg.
Limited seats available.

PROGRAMME

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
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<tbody>
<tr>
<td>9.15 am – 9.45 am</td>
<td>Registration</td>
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<tr>
<td>9.45 am – 9.50 am</td>
<td>Welcome address</td>
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<tr>
<td></td>
<td>by Dr Ng Kah Wee, Associate Consultant</td>
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<td>Dept of Psychiatry, SGH</td>
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<tr>
<td>9.50 am – 10.10 am</td>
<td>‘This is just a phase’: Dieting or an Eating Disorder?</td>
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<td>by Dr Victor Kwok, Associate Consultant</td>
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<td></td>
<td>Dept of Psychiatry, SGH</td>
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<td>10.10 am – 10.30 am</td>
<td>Self Esteem and Eating Disorders</td>
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<td>by Ms Vivien Yap, Psychologist</td>
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<td></td>
<td>Dept of Psychiatry, SGH</td>
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<tr>
<td>10.30 am – 11.20 am</td>
<td>Refreshments and interactive booths</td>
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<tr>
<td>11.20 am – 11.40 am</td>
<td>Living Beyond Your Eating Disorder</td>
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<tr>
<td></td>
<td>by Ms Woo Su Ling, Occupational Therapist</td>
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<td>Dept of Occupational Therapy, SGH</td>
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