



Hepatitis B Vaccination During Pregnancy

1.

If a pregnant woman was not vaccinated against Hepatitis B and wants to receive vaccination during pregnancy, is it safe to vaccinate or not?

Question submitted by:
Dr. Georgette Mann
Burlington, Ontario

Hepatitis B Vaccine (HBV) is a recombinant vaccine with no known harm to the fetus or newborn. It is safe to vaccinate against Hepatitis B during pregnancy. Childhood immunization is now routine but many adults have not been immunized. HBV should be given during pregnancy to women who are completing an immunization series begun prior to conception and unimmunized pregnant women negative for Hepatitis B (HB) surface antigen, who are at

high risk for acquiring HB. Prevacination screening for HB antibody is not necessary. Screening for HB surface antigen is a routine prenatal laboratory test because vertical transmission of Hepatitis B Virus can usually be prevented by immunization of offspring at birth in unimmunized women.

Answered by:
Dr. Cathy Popadiuk

The Role of Omega 3 in Attention Deficit Disorder

2.

Does Omega 3 help attention deficit disorder? If so, what is the dosage?

Question submitted by:
Dr. Stephen Kwok
Richmond, British Columbia

The use of essential fatty acids in the therapy of children with attention deficit hyperactivity disorder (ADHD) is based on the fact that essential fatty acids (Omega 3 fatty acids - eicosapentaenoic acid and docosahexaenoic acid, and Omega 6 fatty acid - arachidonic acid) are critically important for the function of neuronal tissue, and the observation that there may be lower serum concentrations of essential fatty acids in the serum of children with ADHD. However, the benefits of Omega 3 fatty acids in children with ADHD remains controversial, as the studies that have addressed this issue have had methodological issues. One study, which compared the results of treatment with stimulant drugs alone or stimulant drugs plus Omega 3 supplements, found no additive effect from supple-

mentation. That being said, there are a number of health benefits attributed to the essential fatty acids, with various degrees of evidence supporting them. While having a diet rich in Omega 3 fatty acids may be useful for children with ADHD, current dietary practices in most of North America do not include enough fish to achieve this goal. Parents who wish to supplement their children's diet with Omega 3 can probably best achieve this by adding flax seed or flax oil to their children's diet. It has been suggested that one or two tablespoons q.d. of flax oil could be useful. It should be emphasized that this suggestion is not supported by a robust body of evidence.

Answered by:
Dr. Michael Rieder

How Nutritious is Inulin?

3.

Many "high fibre" foods contain inulin. How nutritious is this substance?

Question submitted by:
Dr. Patricia Elepard
London, Ontario

Inulins are classified as a source of fiber. Biochemically they are natural polysaccharides produced by plants. Plants use inulin as a means of storing Energy. They are typically found in the roots. Most plants that synthesize inulin do not store starch. Inulin is increasingly used in processed foods. Its flavour-ranges from bland to mildly sweet and it can be used to replace sugar, fat, and flour. It is particularly beneficial because it contains a quarter to a third of the food energy of sugar. Thus it is a versatile ingredient with

health benefits. Inulin increases calcium absorption and promotes the growth of intestinal-bacteria. It is a form of soluble-fiber and is sometimes categorized as a prebiotic. Inulin has a minimal effect on blood sugar and it is acceptable for diabetics. The only downside is in the consumption of large quantities, which might lead to gas and bloating.

Answered by:
Dr. Jerry S. McGrath



Can an Intravesical BCG Convert PPD Skin Tests?

4.

Can treatment with intravesical BCG for bladder cancer convert a PPD-non reactor to a PPD reactor?

Question submitted by:
Dr. M Diotallevi
Mitchell, Ontario

Absolutely. Ordinary bacillus calmette-guerin (BCG) vaccination can cause a purified protein derivative (PPD) skin test conversion, and this is one of the major causes of false positive reactions, particularly in settings where exposure to “real” tuberculosis is rare. Although BCG given in infancy rarely gives a significant PPD response lasting into adulthood, BCG administered later in childhood, as was done in many parts of Canada, may give a strong reaction. Intravesical BCG uses the same

vaccine strain, but in much higher doses than those used for vaccination. The doses are so high, that many cases of “BCG-osis” have been described, with systemic infection and even an illness resembling military tuberculosis. The virulence of BCG is low; however, in an immunocompetent host, anti-mycobacterial chemotherapy may not be required.

Answered by:
Dr. Michael Libman

Type 2 Diabetes Treatment

5.

What is more important in treatment of type 2 diabetes? Insulin resistance or β - cell dysfunction?

Question submitted by:
Dr. David Ho-A-Yun
North York, Ontario

Most of us believe that type 2 diabetes occurs due to a combination of both insulin resistance (IR) and β -cell dysfunction. In the state of pre-diabetes, IR stimulates the β -cells to secrete insulin and as long as the β -cells can compensate for the IR by secreting enough insulin, the blood glucose level remains normal. Once the β -cell dysfunction is overwhelmed by the demands posed by the IR, then a state of hyperglycemia ensues. Thus, if there is no β -cell dysfunction, IR on its own would not be able to lead to hyperglycemia, as the β -cell would

compensate by producing a state of hyperinsulinemia and maintain normoglycemia. Therefore, both IR and beta cell dysfunction are important etiologically, and that is the reason why medications that treat both IR (metformin, TZD's) as well as stimulate insulin secretion (SU's, DPP IV inhibitors) are useful in the management of hyperglycemia.

Answered by:
Dr. Hasnain Khandwala

6.

Echocardiogram Frequency Following Aortic Stenosis

How often should an echocardiogram be ordered when following a mild, or moderate, severe aortic stenosis?

Question submitted by:
Dr. Deanna Field
Truro, Nova Scotia

Aortic stenosis (AS) patients who are asymptomatic should be followed clinically and by echocardiogram. The ACC/AHA guidelines recommend that asymptomatic AS patients have serial echocardiographic testing with the following time intervals:

- Severe AS every year
- Moderate AS every two years
- Mild AS every five years

Echocardiograms should also be performed whenever there is an important change in clinical

symptoms or findings. Patients with significant AS can present with angina, congestive heart failure, syncope, or presyncope. Symptoms are usually associated with: the aortic valve area (AVA) $< 0.8 \text{ cm}^2$ and/or transvalvular mean gradient $> 50 \text{ mmHg}$. Patients often exhibit symptomatic improvements and an increased chance of survival after aortic valve replacement (AVR).

Answered by:
Dr. Chi-Ming Chow



Usefulness of Medication in Treating Pathological Gambling

7.

Are medications useful in treating pathological gambling?

Question submitted by:

Dr. J. Malmbers
Edmonton, Alberta

Addictions are in part created by a factor of genetics, lifestyle and the disease itself. To treat addictions, a bio-psycho-social and patient-centric model must be employed. A thorough history of the medications, drugs and patterns of abuse must be taken, as well as the patient's family history and supporting collateral information.

The reason for this, is that the treatment of addictions does not fall solely into the realm of medications. The physician must consider whether the addiction is indeed the disease, or the manifestation of some underlying condition; it may usually be secondary to a trauma or PTSD. These patients with PTSD may have different responses to serotonin and dopamine and need altered (usually higher) doses of these medications. Also, there is usually a flavour of obsessive-compulsive disorder woven into

the fabric of addictions. The substance or behaviour (eg., gambling) becomes so central to the patient's thought process (obsession) that the only way to achieve satisfaction is through the act itself (compulsion).

As such, an excellent combination is quetiapine and citalopram. Quetiapine has a number of metabolites, one of which is structurally similar to methadone, which is used in opioid and opiate addiction management. In fact, the methadone screen may reflect a false positive in patients taking quetiapine. In regards to citalopram, the benefit lies with treating the obsessive, mood, anxiety and compulsive components, as identified above.

Answered by:

Professor Joel Lamoure

Tongue Tie in a Toddler

8.

Do I have to worry about tongue tie in a toddler with no complications?

Question submitted by:

Dr. Steve Choi
Oakville, Ontario

In the case where the child has no complication, the simple answer is "no". A toddler with a tight frenulum (tongue tie) who has normal speech development requires no intervention. While clipping a tight frenulum was a fairly common procedure historically, there is no evidence that

this makes any difference in a child with normal speech development.

Answered by:

Dr. Michael Rieder

9.

Managing α -thalassemia

How should I manage α thalassemia trait? Should I refer them to a geneticist or hematologist?

Question submitted by:
Ben Pangilinan,
Thornhill, Ontario

The thalassemias are a group of heterogenous inherited disorders of globin chain synthesis. The normal adult hemoglobin (Hbg) is composed of two α and two β chains. Various mutations in the α - or β - globin genes lead to different α - or β - thalassemias, respectively.

α -thalassemia results from gene mutations that lead to quantitative reductions in α globin. There are a total of four α genes: two α genes on each of the chromosome 11s. Usually, a mutation in only one of these α genes will result in a silent carrier state. The silent carrier state has no consistent hematologic manifestations; often, the individual is asymptomatic and does not have microcytosis. However mutations in two of the α genes lead to the α -thalassemia trait. Hemoglobin electrophoresis alone, is not typically sufficient for diagnosis; often gene sequencing for the most common varieties is required. Typically, patients with α -thalassemias have asympto-

matic microcytosis, and do not require transfusion support. Further, their lifespan is not lower than the general population.

An important part of patient care management for patients who are carriers of one or two α gene mutations involves family planning. Referral to a geneticist is important for genetic counseling and assistance in prenatal diagnosis, for those at risk for thalassemia major. For individuals with α -thalassemia major, who would typically have all three α gene mutations, symptomatic anemia is present and transfusion support is required. These individuals will require a hematology referral for transfusion support and management, including dealing with the consequences of chronic transfusions, such as iron overload.

Answered by:
Dr. Cyrus Hsia
Dr. Kang-Howson Jan



β-HCG Levels After Miscarriage

10.

After miscarriage, how long can β-HCG levels can be found elevated (a few days, or weeks)?

Question submitted by:

Dr. Sakina Raj
Calgary, Alberta

β-HCG levels may remain elevated for weeks after a miscarriage or abortion. They are highest at 8 to 10 weeks gestation, reaching a level up to 150,000 mIU, and are expected to decrease by half every 48 hours after a complete pregnancy loss. Thus, even two weeks after a first trimester miscarriage, the levels may still be elevated to a level of 1500 mIU. The assessment of a complete

miscarriage is based not only on β-HCG levels, but also upon clinical course and, if necessary, ultrasound assessment for retained products of conception. Generally, one would expect the β-HCG to be undetectable beyond three weeks following a miscarriage.

Answered by:

Dr. Cathy Popadiuk

Testosterone Deficiency and Clinical Depression

11.

What role does testosterone deficiency (if any), have in the development of clinical depression?

Question submitted by:

Dr. Katherine Allen
Belleville, Ontario

Men experience changes in their levels of sex hormones beginning at around 40-years of age. By 50-years of age, these changes have definitely begun. There are relative reductions in testosterone, and increases in estrogen compounds present. By 70-years of age, 25% of men meet clinical criterion for hypogonadism, which is secondary to low testosterone. This state has been referred to as Andropause.

There are 2 studies looking at about 450 patients by Wang and McNicholas that addresses replacing testosterone in elderly or hypogonadal males, and found patients to report improved mood and “well-being” plus reduced fatigue and irritability.

These observations fit in with the clinical picture of depression.

According to the Diagnostics and Statistics Manual 4th edition, this is a depressed mood or anhedonia that lasts at least two weeks and is a change from the patient's normal demeanor.¹ It impacts on the social, work and personal functioning. It also presents as irritability, fatigue, loss of energy, changes in weight and potential suicidality.

As such, proper testosterone levels and aberrations in the testosterone levels may play an instrumental part in diagnosing and treating clinical depression in middle-aged to senior males.

Reference:

1. Seidman, N. Normative Hypogonadism and Depression: Does 'Andropause' Exist? <http://www.medscape.com/viewarticle/544874>. (Accessed November 5, 2010)

Answered by:

Professor Joel Lamoure



Treatment of Mildly Elevated Thyroid-stimulating Hormone

12. Do we treat mildly elevated Thyroid-stimulating hormone (TSH) if a patient is asymptomatic? What is the follow-up?

Question submitted by:
Dr. Izabella Klosowski
St-Bruno, Québec

An elevated thyroid-stimulating hormone (TSH) in the presence of normal levels of fT4 and fT3 is referred to as subclinical hypothyroidism. In an asymptomatic patient, the risks of mild untreated subclinical hypothyroidism are minimal and the benefits of treatment unclear. In general, if the TSH is less than 10 mU/L, treatment is not considered to be necessary or beneficial. If the TSH is over 10 mU/L, treatment may be associated with improvements in lipid profile, cardiac contractility, etc. If appropriate follow-up can be ensured, I do not routinely treat asymptomatic patients with subclinical hypothyroidism. The thyroid function tests can be rechecked in 6 to 12 months time or sooner if the patient becomes

symptomatic.

The only exception is if the patient is contemplating pregnancy, in which case subclinical hypothyroidism should be treated. Recent studies have suggested, that particularly in the elderly, an elevated TSH is associated with an overall improved outcome health outcome. and increased longevity compared to individuals with a normal TSH level, thus raising further concerns regarding whether this condition should be treated or not.

Answered by:
Dr. Hasnain Khandwala

When Antifungal Treatment Does Not Work For Athletes Foot

13. Are there any good remedies for athletes foot where topical antifungal treatment is not working?

Question submitted by:
Dr. Ulrike Meyer
Pouce Coup, British Columbia

First one has to look at the antifungal being used and the fungus being addressed. There are some resistance issues between antifungals. In fact, some agents are fungicidal and may provide better effect in resistant cases (eg., terbinafine and ciclopirox olamine). I tend to treat the whole hyperkeratotic surface of the feet (whole plantar aspect), as fungi tend to colonize the entire area. The underlying medical condition of the patient also needs to

be looked at. For example, check whether the patient has diabetes, an immunocompromised state, or any underlying skin diseases, such as atopy or psoriasis, etc., and deal with any condition(s). Oral therapy with terbinafine, itraconazole, and fluconazole can be used in very resistant, refractory cases.

Answered by:
Dr. Scott Murray

Triple Therapy *H. Pylori* Treatment Recommendations

14.

What are the current treatment investigation recommendations following triple therapy for positive *H. Pylori* patients?

Question submitted by:
Dr. M. Pinder
The Pas, Manitoba

Confirmation of eradication should be strongly considered in the following settings:

- Any patient with an *Helicobacter pylori*-associated ulcer
- Those with *H. pylori*-associated MALT lymphoma
- Individuals who have undergone resection of early gastric cancer

Urea breath testing performed at least four weeks after treatment has been promoted as the test of choice to confirm *H. Pylori* infection. Stool antigen testing is available in the United States, but may be less accurate. Endoscopy with biopsy is a more invasive means to determine if *H. Pylori* has been successfully eradicated.

Answered by:
Dr. Jerry S. McGrath



How To Treat Strep Carriers

15.

How should strep carriers be treated?

Question submitted by:

Dr. Steve Choi
Oakville, Ontario

In general, there is no recommendation to treat carriers of Group A streptococcus. Such carriage can be very prevalent – up to 20% of young children may be carriers during the winter season. Screening and treatment at this level would be highly impractical. There has not been any data suggesting that “decolonization” leads to less frequent morbidity, or even transmission.

Eradication of the carrier state is not easy, and persistence even after a full course of antibiotics is common. Indeed, there have been suggestions that colonization is important in building immunity to pathogenic strains, and that eliminating carriage may have detrimental effects. The one exception has been in necrotizing or highly invasive streptococcal disease. Due to a few very rare reports of transmission of a strain from a

case of highly invasive disease to a close contact, even though the contact usually has had only relatively minor morbidity, a few public health bodies have issued recommendations for antibiotic prophylaxis. Without any supportive data, treatment with a first generation cephalosporin has been suggested.

The only other recommended prophylaxis has been in the case of rheumatic fever. It seems clear that recurrent streptococcal infection in these cases can lead to recurrences of rheumatic fever and progressive heart valve damage. Therefore, continuous prophylactic treatment with penicillin is recommended, often for many years.

Answered by:

Dr. Michael Libman

Investigations of Asymptomatic Nodules in Sarcoidosis

16.

What investigations should be done in an individual who had a biopsy done that proved sarcoidosis, with asymptomatic nodules on his trunk and limbs?

Question submitted by:

Dr. Elena Swift

Some patients can present with sarcoidosis of the skin without internal involvement. However the initial investigation/examination of a person presenting with a positive biopsy of specific sarcoid skin lesions should encompass the range of common internal manifestations of this disorder. This should include CBC count with differential and platelets, serum calcium and 24 hour urine calcium levels, serum

angiotensin-converting enzyme (ACE), serum chemistries such as liver and renal studies, as well as a chest x-ray and ECG. Any systemic symptoms would prompt referral to the relevant subspecialty for further, more specific investigation.

Answered by:

Dr. Scott Murray

Vitamin D and Calcium Dosing for Long-term Steroid Use

17.

A patient is on long-term steroids, what is the suggested therapeutic vitamin D and calcium dosing?

Question submitted by:

Dr. Charles Lynde
Markham, Ontario

Patients on long-term glucocorticoids are at an increased risk of osteoporosis and fractures. Glucocorticoid induces a negative calcium balance, by decreasing intestinal calcium absorption, and increasing urinary calcium excretion. It is recommended that patients taking glucocorticoids maintain a calcium intake of 1000 to 1500 mg q.d. and a vitamin D intake of at least 1000 IU q.d. It should, however, be recognized that though calcium and

vitamin D supplementation is necessary, it is not generally enough to prevent bone loss and fractures in these high risk patients. Hence, it is recommended that if they are to be on more than 5 mg of prednisone for a period of over three months, additional measures such as bisphosphonates, etc., are usually required.

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Answered by:

Dr. Hasnain Khandwala