Jaundice is derived from the French word ‘jaune’, which means yellow. It is not a disease per se but a visible sign of an underlying disease process. It can indicate liver or gall bladder disorders.

Jaundice is a yellowish discoloration of the skin, mucous membranes and of the sclerae caused by elevated levels of bilirubin (exceeds 2.5-3 mg/dl) in the blood (hyperbilirubinemia). Bilirubin is formed when hemoglobin (the part of red blood cells that carries oxygen) is broken down as part of the normal process of recycling old or damaged red blood cells. Bilirubin is carried in the bloodstream to the liver, where it binds with bile. Bilirubin is then moved through the bile ducts into the digestive tract, so that it can be eliminated from the body. Most of the bilirubin is eliminated in stool, but a small amount is eliminated in urine. If bilirubin cannot be moved through the liver and bile ducts quickly enough, it builds up in the blood and is deposited in the skin. The result is jaundice.

Since bilirubin is processed by the liver, the symptoms of jaundice may indicate damage to the liver in adults. If the cause is not treated, it can lead to liver failure.

Types of jaundice:

**Physiological (normal) jaundice**: generally occurs in newborns. It is common in newborns because babies have a high level of red blood cells in their blood and these are broken down and replaced frequently. The liver of new born babies is not yet fully developed, so it is less effective at processing the bilirubin and removing it from the blood.

**Jaundice of prematurity**: occurs frequently in premature babies since they are less ready to excrete bilirubin effectively.

**Blood group incompatibility (Rh or ABO problems)**: if a baby has a different blood group than the mother, the mother might produce antibodies that destroy the infant’s red blood cells leading to a sudden buildup of bilirubin in the baby’s blood.

**Hepatocellular jaundice**: occurs as a result of liver disease or injury.

**Hemolytic jaundice**: occurs as a result of hemolysis leading to an increase in production of bilirubin.

**Obstructive jaundice**: occurs as a result of an obstruction in the bile duct (a system of tubes that carries bile from the liver to the gallbladder and small intestine), which prevents bilirubin from leaving the liver.

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**Editorial**

Dear Readers,

Greetings from GHPL!

Welcome to the August issue of Health Connect.

Every year on 28th July, WHO and its partners mark World Hepatitis Day to increase the awareness and understanding of hepatitis and the diseases that it causes. There are different hepatitis viruses - Hepatitis A, B, C, D, and E, which are distinct, but all cause inflammation of the liver. Being an ailment that is pretty much widespread and on the occasion of World Hepatitis day, we thought it appropriate to focus on this disorder and have delved into it in this issue.

The eyes, they say are the windows to the soul. So taking care of your vision should be a priority, just like eating healthy and engaging in physical activity. Daadi Maa kee Potli gives tips to protect your eyesight by ways of healthy nutrition, lifestyle and preventive care.

This issue also carries an interview on Conjunctivitis, of Dr. Anand D - MS, DNB, FMRF, FRCS (Glasg), at Vasan Eye Care, Bangalore. We thank him for his valuable inputs.

We hope you continue to find the newsletter interesting and informative. Do write in with your comments and feedback. We would love to hear from you!

RKT Krishnan
Editor, Health Connect and CEO, Good Health Plan Ltd
Daadi Maa Kee Potli
(from the Grandmother's closet)

Simple tips for eye care

Eyes are the most sensitive, beautiful and one of the most important part in human body. Especially in today’s hectic lifestyle they need lot of care and attention. Here are some simple tips for eye care:

**Broccoli, Brussels sprouts, Bell peppers**: contains vitamin C & is a powerful antioxidant which protects the eye cells from damage. Eat these in plenty as it is known for slowing down and preventing age-related macular degeneration, glaucoma, and cataracts.

**Carrots & Spinach**: contains Vitamin A, beta carotene (an antioxidant) which helps in maintaining healthy eyes.

**Cucumber**: cool and soothing and their astringent properties cause blood vessels to constrict. It helps in removing eye wrinkles and dark circles under eyes. Place slices of cucumber on the eyes & relax.

**Essential oils**: For removing under eye wrinkles & puffy eyes essential oils like Lavender, Carrot seed, castor, chamomile, etc. can be used. Soak cotton swabs in the diluted essential oil and dab it below your eyes or gently massage with the essential oil.

**Rose water**: contains anti-bacterial and antiseptic properties. Soak cotton swabs mildly in rosewater and place it over the eyes for a soothing, cooling and relaxing effect. Also helps in reducing the dark circles. It is good for those who spend long hours in front of a computer.

**Potato**: Potato starch acts as an anti-inflammatory agent to ease irritated eyes. Slice a raw Potato and place it on the eyes for 15-20 minutes & relax.

**Wild salmon & sardines**: contain omega-3 fats which protect tiny blood vessels in the eyes & is good for overall eye health.

**Water**: Wash the eyes regularly with cold water as it removes all the dust and dirt and keeps them clean.

**Eye care at work place**:  
- After every hour of work, look at a distant object/stare out of the window
- Blink frequently at least 12-15 times per minute. Not blinking can lead to dry eyes
- Fix an anti glare screen on to the monitor/use anti glare glass while working
- Also position the monitor and lights in such a manner that glare from the screen is minimum
- Do not read in dim light & do not look at a bright light directly
- Avoid wearing contact lenses for more than 18 hours
- Exercise your eyes, and also be sure to relax them
- Rub the palms & then cover the eyes with warm palms for about a minute. This relaxes and soothes the eyes

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Jaundice... contd...# 1

**Causes:**
Jaundice occurs if there is a dysfunction of the normal metabolism or buildup of bilirubin. Either the body is producing too much, or it’s not getting rid of it fast enough. This can occur at various stages. The causes of jaundice based on where the dysfunction occurs are:

- **Pre-Hepatic**: When the problem arises before secretion to the liver it is called pre-hepatic. If an infection or medical condition makes the red blood cells break down sooner than usual, bilirubin levels rises. This is known as pre-hepatic jaundice. Conditions that can lead to this include malaria, sickle cell anaemia, Thalassemia, Gilbert’s syndrome6, hereditary spherocytosis5, etc.
- **Hepatic**: When the problem arises within the liver it is said to be Hepatic. If the liver is damaged, the ability to process bilirubin is affected. This causes Hepatic jaundice. The liver damage may be caused by hepatitis, alcoholic liver disease, glandular fever4, liver cancer, illegal drug use, paracetamol overdose, etc.
- **Post Hepatic**: When the problem arises after bilirubin is excreted from the liver it is said to be Post Hepatic. Gallstones, pancreatitis, pancreatic cancer and cancers of the gallbladder or bile duct may disrupt the bilirubin removal process leading to jaundice. This is called post-hepatic jaundice.

**Symptoms**

- Fever
- Loss of appetite
- Fatigue
- Weakness
- Nausea & vomiting
- Intense itching
- Dark coloured / reddish urine
- Yellow colouration of skin / sclera
- Pale or clay-colored stools
- Weight loss
- Abdominal pain

**Diagnosis**

The presence of jaundice requires a comprehensive medical evaluation to determine its cause. The yellowing of skin and eyes are the indications of jaundice. A physical examination will be carried out to look for signs of swelling of the liver and legs, ankles or feet which might indicate cirrhosis of the liver.

Urine can be tested for urobilinogen, which is produced when bilirubin is broken down. Finding high or low levels can help pinpoint the type of jaundice. Blood tests with special attention being given to liver function tests, complete blood count (CBC), electrolyte panel and lipase levels could be undertaken. A liver function blood test may indicate hepatitis, cirrhosis or alcoholic liver disease.

If required Ultrasound, computerized tomography (CT) scan, magnetic resonance imaging (MRI) and Cholescintigraphy (HIDA scan)7 may be suggested, to

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4 a harmless genetic condition in which a liver enzyme responsible for the disposal of bilirubin is abnormal
5 a genetically-transmitted disorder that affects red blood cells
6 a type of viral infection
7 A hepatobiliary (HIDA) scan is an imaging procedure used to diagnose problems in the liver, gallbladder and bile ducts wherein a radioactive chemical or tracer is injected into a vein in your arm.

Contd...#3
News bits

Health insurers widen cover with feature-rich policies
Source: The Hindu Business Line

General insurance companies are giving a makeover to their health insurance plans by covering more than just hospitalisation expenses. They have come up with comprehensive policies that will cover, besides hospitalisation reimbursement, pre-hospitalisation expenses such as out-patient department and wellness services. Further, these companies are also providing additional features in health insurance policies such as Worldwide Emergency Cover, disease-specific covers, value-added services in the form of discounts, health maintenance benefits and consultation charges for second opinion.

Indian govt working on world’s largest health insurance scheme
Source: Business Standard

The new Indian government is planning to bring about a “complete transformation” of the health sector and is working on the blueprint of the world’s largest universal health insurance programme. This was announced by Health Minister Harsh Vardhan as he read out a speech by Prime Minister Modi to a gathering of US-based Indian medical professionals in San Antonio, Texas, underscoring the need for all citizens to involve themselves in the national endeavour for “Healthy India”.

Insurers go full steam to sell recharge health plans
Source: The Times of India

After the acceptance of top up plans, health insurers are now looking to popularize recharge health option plans. Under a recharge health plan, if the person insured exhausts his or her total sum insured, during a particular year, due to some hospitalization, the plan allows reinstatement of the sum insured. The entire SI can be utilized again in case of subsequent hospitalization during the same year for a small charge. There are exceptions, like the reinstated sum insured cannot be carried forward nor can the insured get claim benefits on account of previous illness for which the sum insured got exhausted earlier.

Indian companies focus on health to enhance employee performance
Source: Business Standard

More and more Indian firms have started focusing on “robust health and wellness strategy” in order to boost employee performance at the workplace, according to a Towers Watson report. As much as 96% Indian employers feel that health and productivity (H&P) played a moderate to essential role in their organisation's health strategy, and three in every four Indian employers expect the focus on H&P to grow in the next two years, the global professional services provider said in the report titled “Staying@Work”. Leading the Asia Pacific markets, almost half (44 per cent) of the Indian companies plan to put in place a health and well-being strategy in the next couple of years, while 48 per cent already have one in place, the report said.

Jaundice... contd...# 2

evaluate any abnormalities of the liver, gallbladder and pancreas.
To rule out conditions such as cirrhosis or liver cancer, a liver biopsy or Endoscopic Retrograde Cholangiopancreatography (ERCP)\(^8\) may be suggested.

Treatment

The treatment for jaundice depends entirely on the type & cause of jaundice. Few may require hospitalization whereas others may be treated at home under the supervision & close monitoring of the doctor. Irrespective of the type & cause of jaundice, alcohol cessation is necessary. Proper diet and adequate rest is essential for recovery from jaundice.

- Jaundice that occurs due to anemia may be treated by elevating the iron levels in the blood through iron supplements or with the intake of foods rich in iron.
- Jaundice induced by hepatitis may be treated with anti-viral medications.
- Surgery may be required in cases where the condition develops as a result of blockages.
- In some cases, jaundice may even develop as a side effect of certain medications. In such cases, it may be treated by altering the dosage or changing the medication.
- Steroids may be used in the treatment of some autoimmune disorders.
- In cases of cancer leading to jaundice; consultation with an oncologist is required. The treatment will vary depending on the type and stage of the cancer.
- In cases of liver failure/cirrhosis, a liver transplant may be required. Patients with ‘cirrhosis’, may require treatment with diuretics and lactulose\(^9\).
- In cases of mild viral hepatitis, it can be managed at home under close supervision & monitoring of the doctor. In such cases try using other natural methods that are believed to help in the treatment of jaundice but exercise caution. Some of the most common jaundice natural remedies include having sugarcane juice, barley water, lemon + ginger juice, turmeric water, tomato juice, gooseberry juice, etc.

Prevention

- Avoid smoking & excess intake of alcohol
- Avoid potentially contaminated food/unsanitary water as this may lead to Hepatitis A
- Maintain good sanitation and sewage disposal methods
- Vaccination against Hepatitis A & B infection
- Maintain a healthy weight
- Regular exercise for atleast 30 minutes a day
- Cultivate healthy eating habits

Conclusion

Always seek immediate medical advice, if signs of jaundice as mentioned are evident. They are an important warning sign that something is wrong with the normal processes of body. World Health Organisation (WHO) recommends the routine infant vaccination for Hepatitis B virus. Implementing preventive measures and raising awareness may bring down the number of jaundice affected patients. Maintaining hygiene, healthy eating habits & avoiding smoking & alcohol is the best way to stay away from Jaundice.

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\(^8\) a small, flexible fiberoptic camera (endoscope) is used to inject a special dye into the bile ducts; the dye shows up on X-ray and is useful in helping to confirm a diagnosis of pre-hepatic jaundice

\(^9\) Lactulose is a synthetic sugar used to treat constipation
Interview - Conjunctivitis

Dr. D. Anand, MS, DNB, FMRF, FRCS (Glasg), Vasan Eye Care, Bangalore

What is conjunctivitis and what are its symptoms & causes? Generally, how long does it last?

- Conjunctivitis also called Pink Eye means inflammation of conjunctival layer that surrounds the black zone cornea.
- Symptoms are redness, watering with or without discharge, itching, burning sensation of eyes, matting of eyelashes, an irritability to open eyes in the morning.
- Causes: Infections - Bacterial, Viral, Chlamydial and immunological, allergy-dust, house-dust, pollen, pollution.
- Infectious conjunctivitis is the most common viral conjunctivitis and it lasts for 15 to 20 days with proper treatment but in some severe cases or if patient has used self medication it may last long.

What are the types of conjunctivitis? How is it diagnosed?

- Infectious Conjunctivitis and Allergic Conjunctivitis are the most commonly seen conjunctivitis.
- Infectious conjunctivitis is diagnosed by history of discharge from eyes, redness and burning sensation of eyes. Also patient gives history of fever and common cold.
- Allergic conjunctivitis is diagnosed by history of itching, discharge, irritation of eyes. Patient will have papillae at conjunctival layer or limbal area, sometimes giant papillae, shield ulcer on cornea in chronic cases.

What are the prevention measures?

- Good lid hygiene
- Washing the eye with clean water
- Wearing protective goggles in dusty environments and while driving two wheeler
- Removing scales of eyelid margins with good cotton soaked in warm water containing diluted baby shampoo

How serious is conjunctivitis? What could be the complications related to this?

Conjunctivitis is an emergency in infants when it is suspected as bacterial conjunctivitis. Fortified antibiotics are to be used topically every hour to prevent it from spreading to the cornea. It may lead onto bacterial keratitis, perforation, adherent leucoma and if uncontrolled, endophthalmitis and loss of vision.

Viral conjunctivitis if associated with pseudo membranes should be treated with topical antibiotics, steroids and plenty of lubricants. If steroids are tapered quickly when the response is good, it may lead on to recurrent sub-epithelial keratitis.

Allergic conjunctivitis with giant papillae can cause shield ulcers over cornea where topical antibiotics, mild steroids and plenty of lubricants needs to be applied. Shield ulcers are prone to get infected and cause keratitis.

What precautions should be taken to stop transmission to close relatives & friends?

- Good lid hygiene
- Washing hands repeatedly by soap and water
- At home, have separate toiletries and towels.

Any general advice for our readers?

- Good hygiene
- No self medication
- Use eye drops as per doctors advice until the duration prescribed
- Recurrent redness, discharge and sudden worsening of symptoms are cause for an alarm especially in children, which needs to be treated appropriately.
- Contact lens wearers should follow hygienic practices like: trim their nails, use solutions as prescribed to clean lenses, wear them for appropriate specified time and should not sleep with lenses on the eyes.

“Views expressed herein are purely personal and do not reflect the views of the Hospital”