

## GAIN KNOWLEDGE HELP SOCIETY

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**Any Comment, Query ? Feel Free to contact US (087-596888)**



## What is ADHD?

Attention Deficit Hyperactivity Disorder (ADHD) is defined as poor or short attention span and impulsive behavior which is inappropriate for the child's age. Some children may manifest hyperactive trait.

## Types of ADHD

### HYPERACTIVE



1. Often fidgets with hand or feet or squirms.
2. Often leaves seat in classroom and elsewhere.
3. Often runs about or climbs excessively.
4. Has difficulty playing or engaging in leisure activities quietly.
5. Is often on the go or acts as if "driven by a motor".

### INATTENTIVE



1. Often fails to pay close attention to details.
2. Has difficulty sustaining attention in work and play.
3. Does not seem to listen when spoken to directly.
4. Often does not follow through on instructions and fails to finish tasks.

### COMBINED



1. Both inattention and hyperactivity/impulsivity are present.
2. This is the most common type of ADHD.

## Signs of ADHD



## TREATMENT OF ADHD

### BEHAVIORAL THERAPY

- Provide positive attention. Positive playtime reduces attention-seeking behaviour. It will make your consequences more effective.
- Give effective instructions. Gain your child's full attention before giving directions. Turn off the television, establish eye contact and place a hand on your child's shoulder before saying, "Please clean your room." Give one instruction at a time and ask your child to repeat back to you what he heard to make sure he fully understands.
- Praise your child's effort. Catch your child being good and point it out. Praise motivates children with ADHD to behave and frequent feedback is important.
- Establish reward can be a great way to help kids with ADHD stay on track. Establish a few target behaviours, such as staying at the table during a meal or using gentle touches with a pet.
- Use consistent consequences such as placing a child in time-out, taking away privileges, and allowing for natural consequences can be effective discipline techniques.

### PHARMACOLOGICAL

Medications commonly used to treat ADHD symptoms include stimulants such as methylphenidate and amphetamine; non-stimulants, such as atomoxetine; tricyclic antidepressants; and alpha agonists

### REFERENCES

1. The Merck Manual of Medical Information 2<sup>nd</sup> Edition. 2003. Page 1400-1401.
2. ADHD Symptoms and Treatment. 5 August 2019. Website. Available from: <https://www.verywellmind.com/adhd-in-children-20844>
3. Osland ST, Steeves TDL, Pringsheim T. Pharmacological treatment for attention deficit hyperactivity disorder (ADHD) in children with comorbid tic disorders. Cochrane Database of Systematic Reviews 2018, Issue 6. Art. No.: CD007990. DOI: 10.1002/14651858.CD007990.pub3.



# **ARE HAND SANITIZERS YOUR REAL BUDDY?**



## **BEWARE OF FAKE PRODUCT**

**FAKE PRODUCT IS DANGEROUS & CAN KILL**

1. National Pharmaceutical Regulatory Agency (NPRA) was created in October 1978 under the quality control activity of Pharmacy and Supply Programme to execute quality control on pharmaceutical products.
2. All cosmetic product and healthcare supplement have to register with NPRA to make sure the product that selling are not harmful for user.
3. NPRA will give a notification number to each of the cosmetic product or pharmaceutical product that available in the market once it had verified by them.
4. If the item does not have notification number, it may indicate the product is not checked by NPRA and it may harmful for user.
5. User can check product notification number through KKM phone call or online to know more about the content of the product before purchase.

# How to check for product notification?

1.

Type "NPRA" in search engine

Google

npa

X

🔍

🔍

2.

Click "Products Search"

[www.npra.gov.my/index.php](http://www.npra.gov.my/index.php) - Translate this page

National Pharmaceutical Regulatory Agency (NPRA) - Home

6 days ago - National Pharmaceutical Regulatory Agency (NPRA), Ministry of Health Malaysia, Malaysia Drug Control Authority.

Products Search

Check product that registered or notified with NPRA. Canan ...

Directory

Staff Directory - Our Location - Public Enquiry / Complaints ...

QUEST3+ System

Product Classification, QUEST3+ System Basic, ASEAN ...

Industry | Product Registration ...

Industry & QUEST3+ System Main Page. Products Registration ...

Consumers

National Pharmaceutical Regulatory Agency (NPRA) ...

Health Professionals

and not present as medical advice to health professionals. Safety ...

3.

Choose "Pharmaceutical(Medicine)" or "Cosmetic"

Type in the cosmetic or medicine's detail into the column

Category;

a) Nama Produk

b) Nombor Pendaftaran

c) Produk -Nombor Notifikasi

d) Nombor Syarikat

e) Name Pengilang

f) Pengimport

g) Bahan Aktif

Q QUEST 3+ Product Search

Product Category

☐

Pharmaceutical

☒

Cosmetic

Search By

Product Name

▼

Search

Q

Dettol Hand Sanitizer Original

Please enter 5 or more characters



Q Search

4.

The product detail information in the link .

Show 10 entries Print

Search:

#	Registration No / Notification No	Product Name	Holder
1	NOT200202349K	Dettol Hand Sanitizer Original	RECKITT BENCKISER (MALAYSIA) SDN. BHD.
2	NOT200500220K	Dettol Hand Sanitizer Original	RB (HEALTH) MALAYSIA SDN BHD

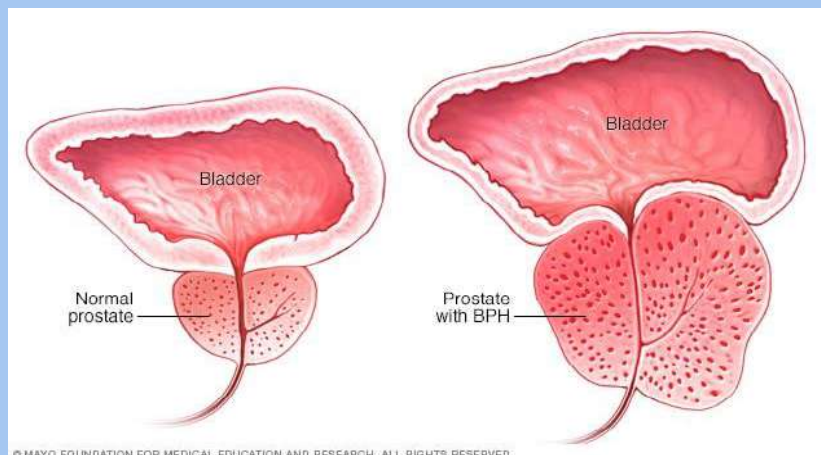
Showing 1 to 2 of 2 entries

< 1 >

## References :

1. Semakan nombor pendaftaran produk/ubat dengan KKM online. Available from: <https://www.semakan.my/semakan-no-pendaftaran-produk-dengan-kkm>
2. National Pharmaceutical Regulatory Agency. Ministry of Health Malaysia. Available from: <https://npa.gov.my/index.php/en/component/content/article/205-english/faq-cosmetic/1527078-faq-pharmacovigilance-2.html?Itemid=1391>

# Benign Prostate Hyperplasia



- Prostate is part of the male reproductive system that makes fluid for semen.
- It is about the size of a walnut.
- As the prostate enlarges, it presses against the urethra.
- Narrowing of the urethra leads to urinary retention.

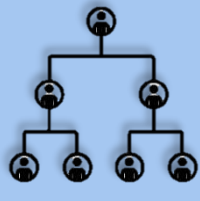
## Are You At Risk?

### ENLARGED PROSTATE (BPH)

(FIND OUT NOW)



**AGEING**



**FAMILY HISTORY**



**DIABETES**



**HEART DISEASES**



**OBESITY**



**ERECTILE**



### Recognised the signs & symptoms to solve the annoying issue



**Painful**



**Urinary Frequency**  
especially at night



**Blood in the urine**



**Urgency**

the need to urinate immediately



**A feeling the bladder isn't empty**



**Dribbling after urination**



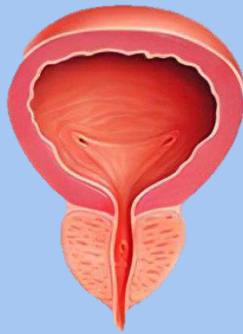
**Intermittency**  
flow stops and goes



**Hesitancy**

flow doesn't start right away

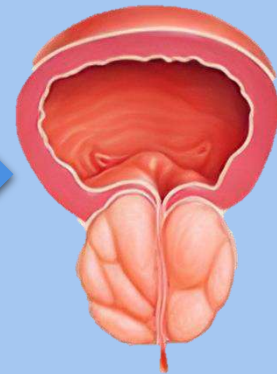
### Normal Prostate



As men increases in age:

- Decrease in active testosterone
- Higher proportion of estrogen
- Accumulate high level of dihydrotestosterone (DHT)

### Benign Prostate Enlargement



## Benign Prostate Hyperplasia Treatment

### Medications:



#### 1. Alpha-1-blockers [Terazosin (Hytrin), Doxazosin(Cardura) and Alfuzosin (Xatral)]

These drugs relax smooth muscle in the prostate and bladder neck, thereby improving urine flow.

**Note:** Patients are advised to take these medications at bedtime due to side effects (giddy, light headed)

#### 2. 5-alpha Reductase Inhibitors [Finasteride(Proscar) and Dutasteride (Avodart)]

These drugs partially shrink the prostate gland by inhibiting the enzyme 5-alpha reductase that is needed to convert testosterone to dihydrotestosterone which is necessary for prostate growth.



### Procedures:

1. Transurethral resection of the prostate
2. Transurethral incision of the prostate (TUIP)
3. Transurethral microwave thermotherapy (TUMT)
4. Transurethral needle ablation (TUNA)
5. Prostatic urethral lift (PUL)
6. Laser therapy (Ablative procedures, Enucleative procedures)

## Lifestyle Modification



**Avoiding or reducing intake of caffeinated beverage and alcohol**



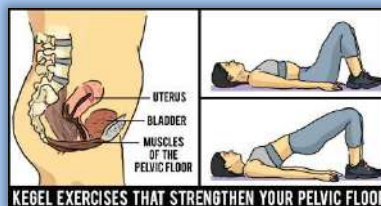
**Reduce intake of liquids before going out or before sleep**



**Rational use of medications**



**Preventing/ Treating Constipation**



**Exercising pelvic floor muscles**

## References

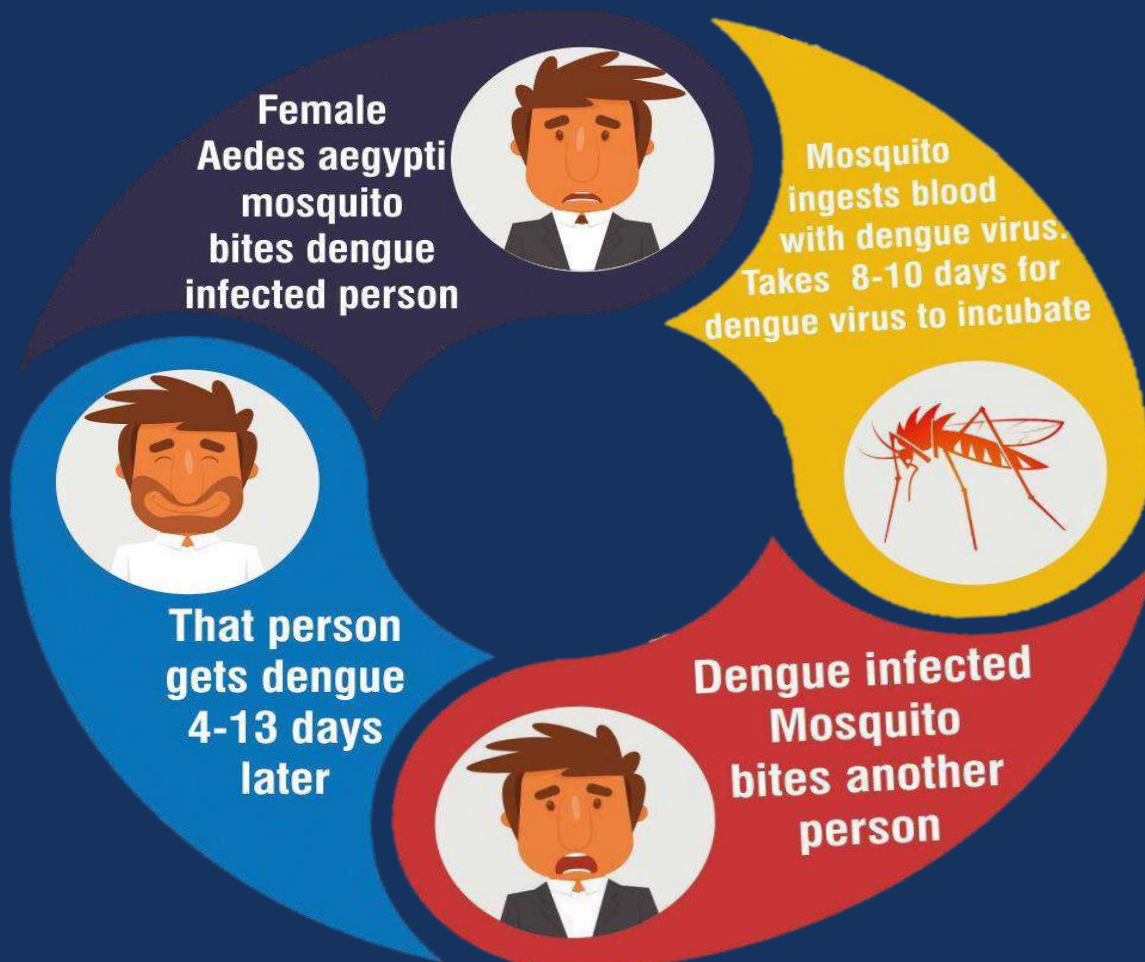
- 1- Prostate enlargement (Benign Prostatic Hyperplasia). National Institute of Diabetes and Digestive and Kidney Disease. September 2014. Available from: <https://www.niddk.nih.gov/health-information/urologic-diseases/prostate-problems/prostate-enlargement-benign-prostatic-hyperplasia>
- 2- Benign prostatic hyperplasia. MyHealth Portal. 26 April 2012. Available from: <http://www.myhealth.gov.my/en/benign-prostatic-hyperplasia-2/>
- 3- What is Benign prostatic hyperplasia? Urology Care Foundation. May 2019. Available from: [https://www.urologyhealth.org/urologic-conditions/benign-prostatic-hyperplasia-\(bph\)#Diagnosis](https://www.urologyhealth.org/urologic-conditions/benign-prostatic-hyperplasia-(bph)#Diagnosis)
- 4- Benign prostatic hyperplasia differential diagnosis. Medscape. 15 January 2019. Available from: <https://emedicine.medscape.com/article/437359-differential>
- 5- MIMS.com. Available from: <https://specialty.mims.com/benign%20prostatic%20hyperplasia/management?channel=urology>
- 6- Mayoclinic.org. Available from: <https://www.mayoclinic.org/diseases-conditions/benign-prostatic-hyperplasia/diagnosis-treatment/drc-20370093>



# DENGUE FEVER

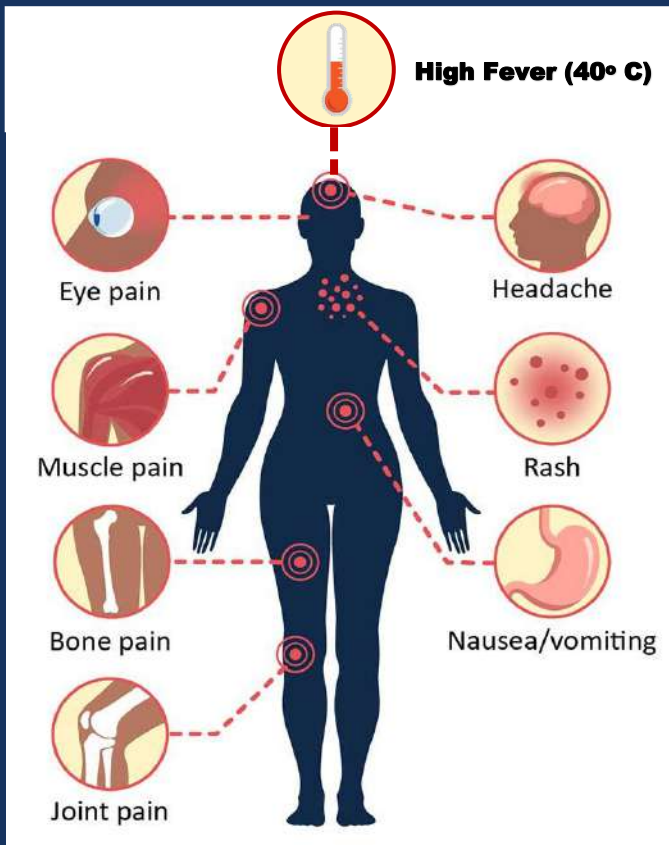
- Dengue fever is a viral disease spread by the bite of infected mosquitoes, *Aedes aegypti*.
- Dengue fever is typically a self-limited disease with a mortality rate of less than 1% when detected early and with access to proper medical care.
- When treated, severe dengue has a mortality rate of 2%-5%, but, when left untreated, the mortality rate is as high as 20%.

## DENGUE TRANSMISSION



# SYMPTOMS OF DENGUE

## Normal dengue fever



## Severe dengue fever



## TREATMENT FOR DENGUE FEVER

- **There is no specific treatment for dengue fever.**
- **Anti-pyretic and pain killer can be taken to control the symptoms of aches and pains, as well as fever.**
  - **The best options to treat these symptoms are paracetamol.**
  - **NSAIDs, such as ibuprofen and aspirin should be avoided, as these drugs may thinning the blood, and in a disease with risk of hemorrhage, blood thinner may exacerbate the prognosis.**

**Use mosquito repellents**



**Stay in air-conditioned or screened areas**



**Leave all used cans and bottles in covered bins**



## **HOW TO KEEP DENGUE OUT OF YOUR HOME**

**Clear clogged drains**



**Use mosquito screens or bed nets**



**Regularly change water in container**



**Place anti-mosquito devices or mosquito trap**



## **References**

1. Kaur, J. (2012, April 26). Dengue Fever. Retrieved May 11, 2020, from <http://www.myhealth.gov.my/en/dengue-fever/>
2. Smith, D. S. (2019, May 3). Dengue. Retrieved May 11, 2020, from <https://emedicine.medscape.com/article/215840-overview#a1>
3. Dengue. (2020, February 14). Retrieved May 11, 2020, from <https://www.cdc.gov/dengue/index.html>
4. Ratini, M. (2019, June 28). Dengue Fever: Symptoms, Causes, and Treatments. Retrieved May 11, 2020, from <https://www.webmd.com/a-to-z-guides/dengue-fever-reference#1>
5. Dengue and severe dengue. (2020, March 2). Retrieved May 11, 2020, from <https://www.who.int/news-room/fact-sheets/detail/dengue-and-severe-dengue>

# Direct Oral Anticoagulant on Heparin-Induced Thrombocytopenia

Prepared by Koh Wei Ling (Pegawai Farmasi UF41 Hospital Labuan)



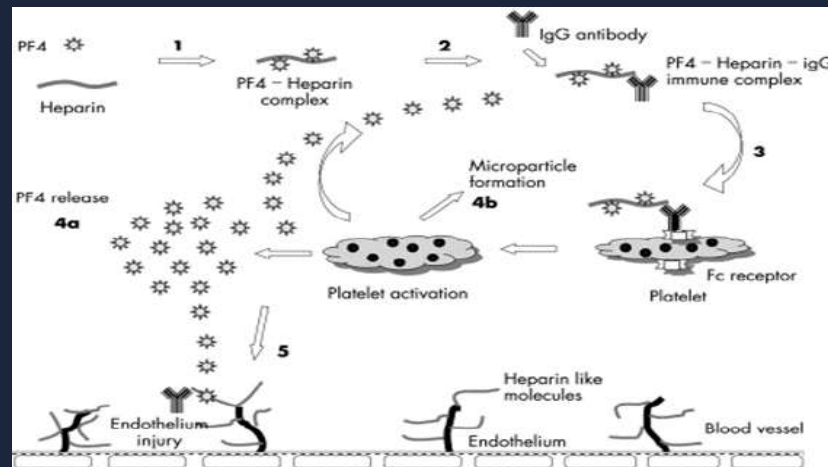
## What is Heparin-Induced Thrombocytopenia (HIT)?

- Heparin-induced thrombocytopenia (HIT) is the development of thrombocytopenia (a low platelet count), due to the administration of various forms of heparin, an anticoagulant.
- It is an immune complication caused by antibodies directed to complexes containing heparin and an endogenous platelet protein, platelet factor 4 (PF4).
- Despite thrombocytopenia, bleeding is rare; rather, HIT is strongly associated with thromboembolic complications.

## Pathophysiology of HIT

### Pathophysiology of HIT<sup>1</sup>

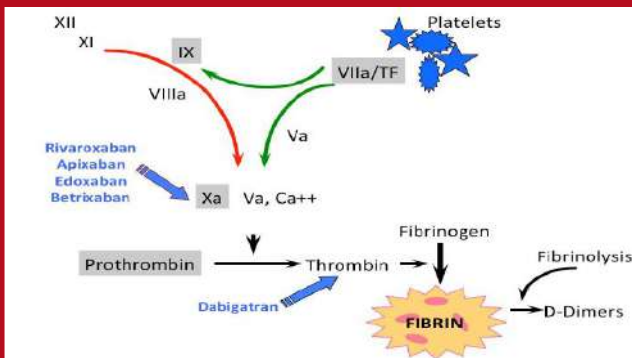
- Heparin binds with PF4 and act as immunogens.
- IgG antibody thus produced forms PF4-heparin-IgG multimolecular complex.
- The complex then binds via Fc receptor to platelets and activates them
- Activated platelet releases additional PF4 and prothrombotic microparticles.
- Immune complex interacts with endothelial cells and promotes immune mediated endothelial damage.



## Direct Acting Anticoagulant (DOAC)

### Mechanism of Action of Direct Acting Anticoagulant (DOAC)

Direct oral anticoagulants (DOACs) inhibit activated clotting factor, either factor IIa (thrombin) or factor Xa directly, in order to treat or prevent blood clots formation. For example, dabigatran acts as a direct inhibitor of thrombin, while rivaroxaban, apixaban, edoxaban and betrixaban act as direct inhibitors of factor Xa.



### Rationale use of DOAC in HIT

Unlike heparin, DOACs that are not recognised by pre-existing HIT antibodies do not interact and complex with platelet factor 4, leading to no platelet activation and aggregation.

### Duration of therapy

Optimal duration is indefinite yet. Some current practices, as well as ACCP guidelines recommend at least 3 months of anticoagulation for patients with HIT-related thrombosis.

### Advantage of DOAC



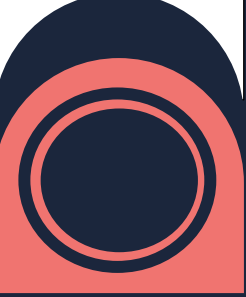

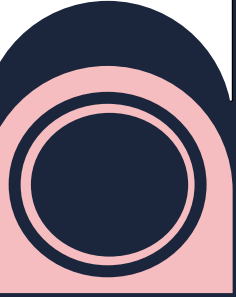





- Fewer drug interactions
- Greater therapeutic index
- Does not require frequent INR monitoring

## References

- Ahmed, I., Majeed, A., & Powell, R. (2007). Heparin induced thrombocytopenia: diagnosis and management update. *Postgraduate Medical Journal*, 83(983), 575-582. <http://doi.org/10.1136/pgmj.2007.059188>
- Gowthami M. Arepally. Heparin-induced thrombocytopenia. *American Society of Hematology. Blood* 2017. 129:2864-2872; doi: <https://doi.org/10.1182/blood-2016-11-709873>
- Schwarb H, Tsakiris DA. New Direct Oral Anticoagulants (DOAC) and Their Use Today. *Dentistry journal*. 2016 Mar 11;4(1):5.
- Miyares MA, Davis KA. Direct-acting oral anticoagulants as emerging treatment options for heparin-induced thrombocytopenia. *Annals of Pharmacotherapy*. 2015 Jun;49(6):735-9.



# Comparison between different Direct Oral Anticoagulant

	Dabigatran	Rivaroxaban	Apixaban	Edoxaban	Betrixaban
					
<b>BRAND NAME</b>					
<b>AVAILABLE DRUG STRENGTH</b>	75mg, 110mg, 150mg TABLET	10mg, 15mg, 20mg TABLET	5mg, 2.5mg TABLET	15mg, 30mg, 60mg TABLET	40mg, 80mg CAPSULE
<b>INDICATION</b>					
Prevention in non-valvular AF*	✓	✓	✓	✓	
Treatment and prevention of recurrent DVT* and PE*	✓	✓	✓	✓	✓
VTE prevention after hip and knee replacement surgery	✓	✓	✓		
<b>ADMINISTRATION</b>	Taken with or without food.	Taken with or without food.	Taken with or without food.	Taken with or without food.	Taken with food.
<b>DOSING FREQUENCY</b>	TWICE DAILY	ONCE DAILY	TWICE DAILY	ONCE DAILY	ONCE DAILY
<b>RENAL DOSE ADJUSTMENT</b>	✓	✓	✓	✓	✓
<b>REVERSAL AGENT</b>	✓	✓	✗	✓	✗

## References

1. North American Thrombosis Forum. (2018). Anticoagulant Comparison Chart 2018 – North American Thrombosis Forum. [online] Available at: <https://natfonline.org/2018/01/anticoagulant-comparison-chart-2018/>
2. MIMS Gateway. Available from: <https://online1.mimsgateway.com.my/>

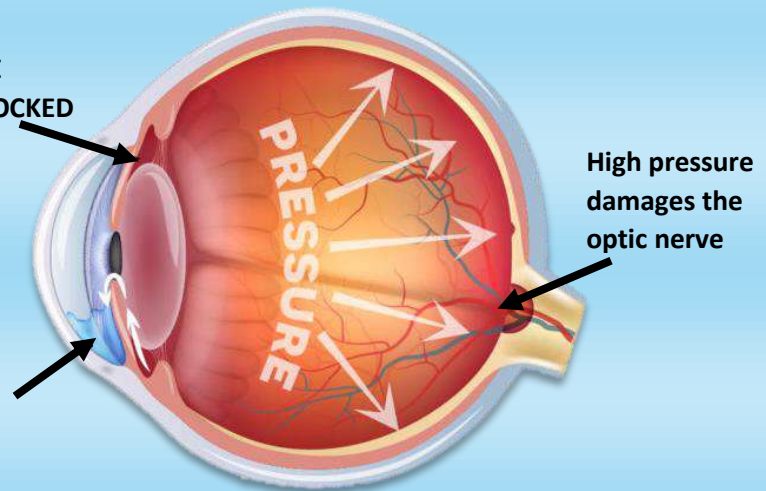
# Glaucoma

## What is Glaucoma?

- Glaucoma is a disease that damages your eye's optic nerve.
- It usually happens when fluid builds up in the front part of your eye.
- That extra fluid increases the pressure in your eye, damaging the optic nerve.

DRAINAGE  
CANAL BLOCKED

TOO MUCH  
FLUID STAYS  
IN THE EYE



## Statistics of Glaucoma

Currently,

**64million people**

**live with Glaucoma**



## Risk Factor of Glaucoma



**Age > 40 year old**



**family with history of  
glaucoma**



**Diabetes mellitus**



140/100mmHG

**Intraocular pressure**



**Intraocular pressure**

## Sign & Symptoms of Glaucoma

- No warning signs
- Blind spots develop in your vision.
- Do not notice any change in their vision till damage is severe
- Known as “ **THE SILENT THIEF OF SIGHT**”



**Open-angle glaucoma**

- It develops slowly
- Irreversible but therapy can prevent it



Severe eye  
pain



Nausea



Vomiting



Blurry  
vision



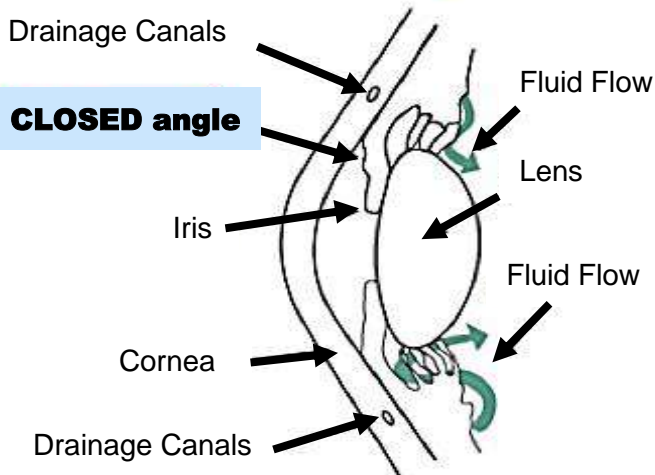
Rainbow  
halos around  
lights

**Closed angle glaucoma**

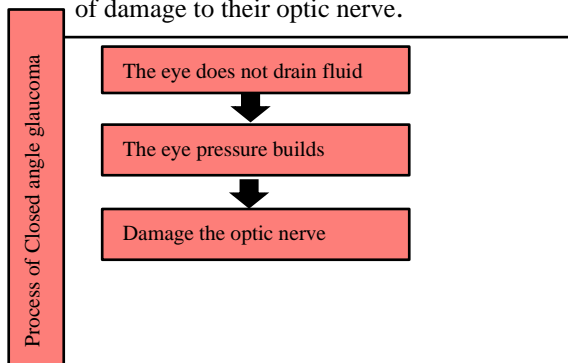
# EVERY DROPS CAN SAVE YOUR VISSION

## Type of Glaucoma

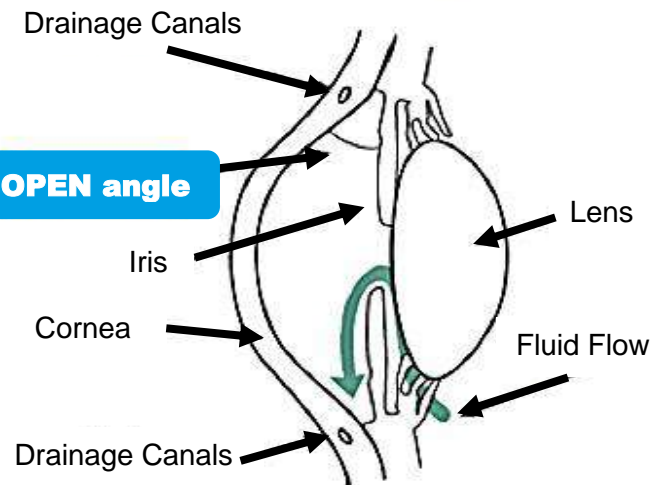
### CLOSED angle



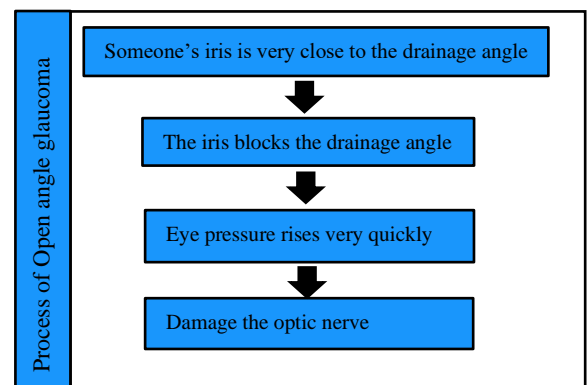
- Most common type of glaucoma.
- It is painless and causes no vision changes at first.
- Regular eye exams are important to find early signs of damage to their optic nerve.



### OPEN angle



- This is called an acute attack & true eye emergency
- Call your ophthalmologist immediately or you might go blind.



## Treatment for Glaucoma

### Prostaglandin analogues



### Beta-blockers



### Alpha-adrenergic agonists



### Carbonic anhydrase inhibitors



### Cholinergic agents



### Combination



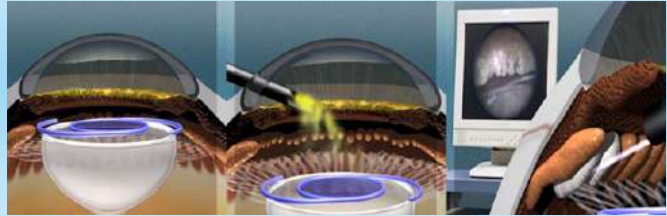
## Laser Treatment

Laser treatment has become important in the management of glaucoma. It is indicated when medical therapy fails, as an adjunct or as a primary treatment where appropriate. There are several types of laser treatment used to treat glaucoma as shown below.

- **Open Angle Glaucoma**

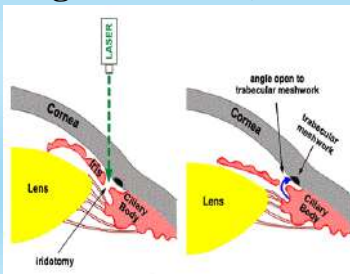


Laser trabeculoplasty for outflow enhancement

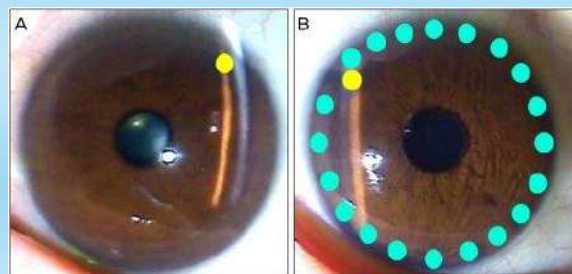


Trans-scleral cyclophotocoagulation (TSCP) for inflow reduction

- **Angle Closure ( $\pm$  Glaucoma)**



Laser iridotomy for pupillary block relief



Laser peripheral iridoplasty for modification of iris contour

## Surgical Treatment

Surgery is indicated in glaucoma when the target IOP cannot be reached despite maximal medical therapy or when there is intolerance or non-compliance to medical therapy. Available surgical options include trabeculectomy, implantation of glaucoma drainage devices (GDD) and non-penetrating glaucoma surgery.

## References

1. Management of Glaucoma (second edition). Clinical Practice Guideline. Ministry of Health, Malaysia. June 2017.
2. Weinreb, R. N., & Khaw, P. T. (2004). Primary open-angle glaucoma. *The Lancet*, 363(9422), 1711-1720.
3. Lin, A. and Biggerstaff, K., 2020. *Acute Angle-Closure Glaucoma (AACG) Medication: Alpha-Adrenergic Agonists, Beta-Blockers, Miotic Agents, Carbonic Anhydrase Inhibitors, Prostaglandin, Ophthalmic, Rho Kinase Inhibitors*. [online] Emedicine.medscape.com. Available at: <<https://emedicine.medscape.com/article/1206956-medication#showall>> [Accessed 12 May 2020].
4. Boyd, K., 2020. *What Is Glaucoma?*. [online] American Academy of Ophthalmology. Available at: <<https://www.aao.org/eye-health/diseases/what-is-glaucoma>> [Accessed 12 May 2020].
5. Radhakrishnan, S., 2020. *What Are The Symptoms Of Glaucoma? - Questions And Answers*. [online] Glaucoma Research Foundation. Available at: <<https://www.glaucoma.org/glaucoma/questions-and-answers-what-are-the-symptoms-of-glaucoma.php>> [Accessed 12 May 2020].
6. Glaucoma. American academy of ophthalmology. Available from: [https://eyewiki.aao.org/Glaucoma\\_in\\_the\\_Developing\\_World#:~:text=The%20number%20of%20people%20with,form%20of%20the%20disease%20worldwide.](https://eyewiki.aao.org/Glaucoma_in_the_Developing_World#:~:text=The%20number%20of%20people%20with,form%20of%20the%20disease%20worldwide.)



“

**20 MILLION  
MIGRAINE ATTACK  
OCCUR EVERYDAY  
WORLDWIDE**

”

# MIGRAINE

## What is migraine?

Migraine is a neurological disorder that is characterized by throbbing recurring pain, moderate to severe, and often unilateral pain that last for 4 to 72 hours.

## Accompanied Symptoms



Vomiting



Headache



Stiff Neck



Nausea



Blurred vision



Sleepy

## Triggers



Light



Smell



Alcohol



Weather



Stress

## Type of Headaches

**Sinus:**  
pain is usually  
behind the  
forehead and /or  
cheekbones



**Cluster:**  
pain is in and  
around one eye



**Tension:**  
pain is like a  
band squeezing  
the head



**Migraine:**  
pain, nausea and  
visual changes  
are typical of  
classic form



## Phases of Migraine



# Treatment Algorithm of Migraine

## Diagnosis

## Patient Education and Severity Assessment

### Lifestyle advice

- Encourage regular meals, adequate hydration with water, sleep & exercise
- Avoid specific triggers if known
- Consider activities that encourage relaxation (Yoga and meditation)

### Mild to moderate

#### A. Simple Analgesic:

1. Paracetamol 1 g four times daily. The maximum dose is 4 g (8 tablet daily).

#### B. NSAIDs:

Take as soon as possible after symptoms begin or to reduce severity or stop the headache completely.

1. Ibuprofen 200 – 400 mg three times daily, maximum 3.2 g daily
2. Mefenamic acid 250 – 500 mg three times daily

### Preventive therapy

- Depends on patient comorbidities, other health issues and drug interactions.
- **Beta blocker** – reduce cerebral blood flow by directly acting on the blood vessels in the brain. Vasodilation (widening of blood vessels) associated with migraines. Example - propranolol 40 mg two to three times daily
- **Tricyclic antidepressant** – increases the level of neurotransmitters in the brain that affect mood specifically serotonin. Serotonin involved in regulation of blood vessels during migraine headaches. Example – amitriptyline 25 – 100 mg daily in divided doses
- **Anti-convulsant** – Studies showed that sodium valproate is effective in reducing headache frequency and well tolerated in adult patients with episodic migraine. Example – sodium valproate 300 – 2000 mg daily

### moderate

### Combination analgesics & caffeine

### Moderate (Nausea, Vomiting and Diarrhea)

**Anti-emetic:** anti sickness medication to prevent nausea and vomiting.

1. Metoclopramide 10 mg three times daily
2. Prochlorperazine 5 mg three times daily.

### Severe

**Triptans:** It is specific for migraine headache and it often reduces or aborts a migraine attack. Patient should take the first dose early when the headache is just beginning to develop for best effect. Examples – Sumatriptan 50 mg per attack and not more than 300 mg daily.

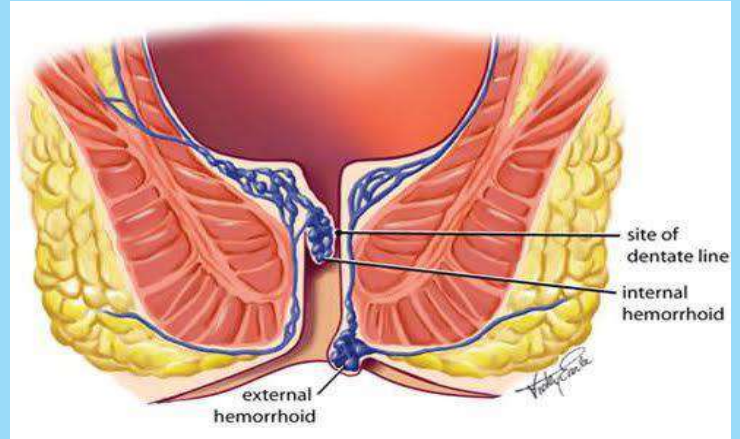
## REFERENCES

1. Ahmed, F. (2012). Headache disorders: differentiating and managing the common subtypes. British Journal of Pain, 6(3), 124–132.
2. Rizzoli, P., & Mullally, W. J. (2018). Headache. American Journal of Medicine, 131(1), 17–24.
3. Migraine Research Foundation (2020). Migraine is more than bad headache. Retrieved from <https://migraineresearchfoundation.org/about-migraine/migraine-facts/>
4. World Health Organization (2014). How common are headaches? Retrieved from <https://www.who.int/news-room/q-a-detail/how-common-are-headaches>
5. World Health Organization (2016). Headache disorders. Retrieved from <https://www.who.int/news-room/fact-sheets/detail/headache-disorders>
6. Severe migraine attacks are classified by the World Health Organization as among the most disabling illnesses, comparable to dementia, quadriplegia and active psychosis. Image Source: Advanced Migraine Relief.
7. Scottish Intercollegiate Guidelines Network (SIGN). *Pharmacological management of migraine*, quick reference guide. Edinburgh: SIGN; 2018. (SIGN publication no. 155).
8. Pharmwiki. Tulane University School of Medicine. 18 July 2012. Retrieved from: [http://tmedweb.tulane.edu/pharmwiki/doku.php/migraine\\_treatment\\_algorithms](http://tmedweb.tulane.edu/pharmwiki/doku.php/migraine_treatment_algorithms)

# Hemorrhoid

## What is Hemorrhoids?

Hemorrhoids cause by elevated pressure in the hemorrhoidal plexus dilation of vascular tissue which contain blood vessels, elastic tissue, connective tissue and smooth muscle in the distal anal canal and result prolapse of the hemorrhoids when condition worsened. There two type of hemorrhoid.



### Internal Hemorrhoids

- Above the dentate

#### Located

- Prolapse bleeding
- Painless

#### Side effect

Grade	Characteristic
Grade I	Not protruding into the anal canal but may cause bleeding
Grade II	Hemorrhoids protrude with defecation but reduce spontaneously
Grade III	Can be pushed back inside the anal canal by using finger when prolapsed outside the canal
Grade IV	Permanent prolapsed

### External Hemorrhoids

- Below the dentate line

- Anal discomfort due to engorgement
- Pain
- Thrombosis of external hemorrhoids can cause acute pain



#### Similarity

- Anal Discharge & Itching because of difficulty with hygiene



# Pharmacological treatment of Hemorrhoid

## Diosmin 450mg + Hesperidin 50mg

It contains Bioflavonoids, Diosmin & Hesperidin which improve capillary function by reducing abnormal leakage.

### Dosage

**Acute Hemorrhoidal Attack:** 4 DAY=6 tablets daily in 2 divided doses

**Normal Hemorrhoid :** 3 DAY= 4 tablets daily in 2 divided doses  
3 DAY= 2 tablets daily

### Brand

Hemorid



## Laxatives

Laxatives such as lactulose are used to change the stool consistency by drawing water into the bowel to make the stool softer

### **Dosage:**

15 ml twice daily

### **Brand:**

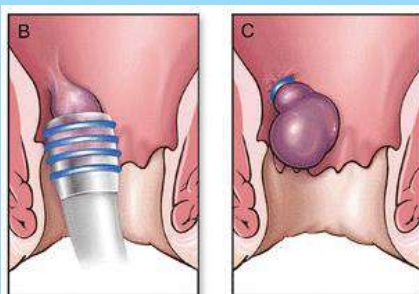
Duphalac



## Take More fiber

Fiber draws water into the lumen of the colon, increasing the water content of the stool. Recommended daily fiber intake is about 28 g for women and 38 g for men. Psyllium husk is an inexpensive bulk-forming fiber supplement may decrease bleeding, pain, prolapse, and itching

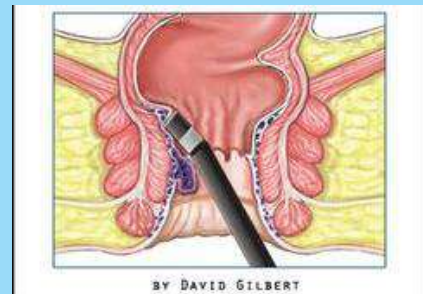
# Surgical Treatment of Internal Hemorrhoids



**RUBBER BAND  
LIGATION**



**SCLEROTHERAPY**



**INFRARED  
PHOTOCOAGULATION**

## References:

1. Anne L. Mounsey et al. Hemorrhoids. American Family Physician. Volume 84, Number 2. July 15, 2011. Available from: <https://www.aafp.org/afp/2011/0715/p204.pdf>
2. Turgut Bora Cengiz, MD and Emre Gorgun. Hemorrhoids: A range of treatment. Cleveland Clinic Journal Of Medicine. September 2019, 86 (9) 612-620; DOI: <https://doi.org/10.3949/ccjm.86a.18079>
3. Davis, Bradley R. et al. The American Society of Colon and Rectal Surgeons Clinical Practice Guidelines for the Management of Hemorrhoids, Diseases of the Colon & Rectum: March 2018 - Volume 61 - Issue 3 - p 284-292. doi: 10.1097/DCR.0000000000001030
4. NHS, Haemorrhoids (piles)- Treatment, 2016 available at [www.nhs.uk/Conditions/Haemorrhoids/Pages/What-happens-page.aspx](http://www.nhs.uk/Conditions/Haemorrhoids/Pages/What-happens-page.aspx)



# Basics of HIV and AIDS

**“PREVENTION IS BETTER THAN CURE, ESPECIALLY WHEN IT HAS NO CURE.”**

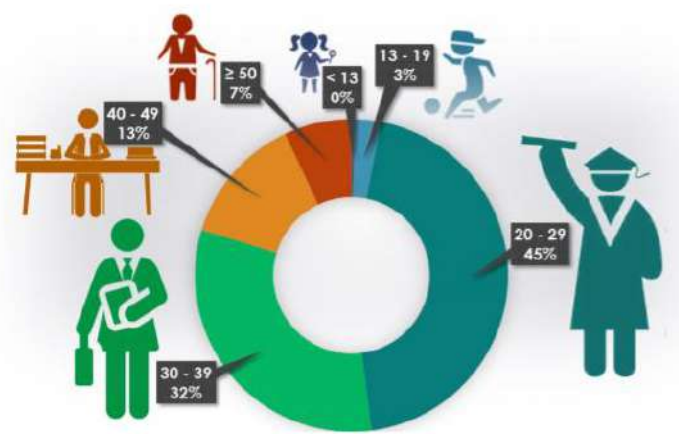
## HIV Epidemic Snapshot In Malaysia:

By 2018,  
87,041 people  
live with HIV

55% of people with  
HIV on antiretroviral  
treatment (ART)

2008: 6,978 HIV cases (equivalent 28  
cases per 100,000 population)  
2018: 3,293 HIV cases (equivalent to  
10 cases per 100,000 population)

### Distribution of reported Malaysia HIV cases by age group in 2018



In year 2018, more than 70% of HIV new infections are reported among people age 20-39 years old.

#### What is **human immunodeficiency virus (HIV)**?

HIV is a virus spread through certain body fluids that attacks the body's immune system, specifically the CD4 cells, often called T cells, which help the immune system fight off infections.

#### What is **acquired immunodeficiency syndrome (AIDS)**?

HIV infection will lead to AIDS when the body's immune system is badly damaged due to the virus. AIDS occurs when the number of CD4 cells falls below 200 cells/mm<sup>3</sup> of blood, or a person develop opportunistic infections regardless of their CD4 count.

## HOW DO YOU GET OR TRANSMIT HIV?

By coming into direct contact with certain body fluids from a person with HIV who has a detectable viral load. These fluids are:

Blood

Semen and pre-semenal fluid

Rectal fluids

Vaginal fluids

Breast milk

## How HIV/Aids is transmitted?



UNPROTECTED SEX



DRUG ADDICTS



BLOOD TRANSFUSION



PREGNANCY



NON-STERILE INSTRUMENTS

## HIV/AIDS is not transmitted



TOUCHING



THROUGH FOOD



WITH A KISS



INSECT BITES



IN THE POOL

## Less common ways of transmission



From mother to child during pregnancy, birth, or breastfeeding



Getting stuck with an HIV-contaminated needle

## How to protect yourself from HIV?



Get tested for HIV if you have the risk



Use condoms



Limit number of sex partners

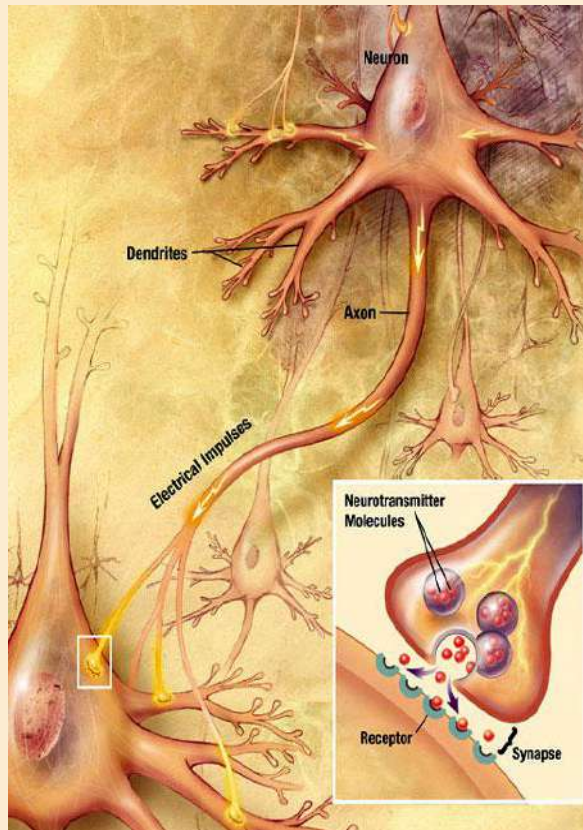


Do not share needles, or other drug injection

### Reference:

1. HIV Basics. (2019, August 06). Retrieved May 10, 2020, from <https://www.cdc.gov/hiv/basics/index.html>
2. HIV Basics. (2020, April 22). Retrieved May 10, 2020, from <https://www.hiv.gov/hiv-basics>
3. HIV/AIDS: The Basics Understanding HIV/AIDS. (2019, July 3). Retrieved from <https://aidsinfo.nih.gov/understanding-hiv-aids/factsheets/19/45/hiv-aids--the-basics>
4. Suleiman, A., & Chai, P. T. Country Progress Report On HIV/AIDS 2019 - Malaysia. Retrieved from [https://www.moh.gov.my/moh/resources/Penerbitan/Laporan/Umum/Report\\_GAM\\_2019\\_\(Final\).pdf](https://www.moh.gov.my/moh/resources/Penerbitan/Laporan/Umum/Report_GAM_2019_(Final).pdf)

# Parkinson's disease

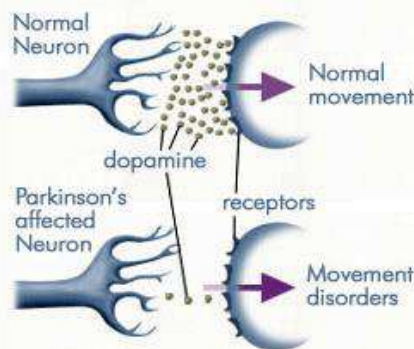


Parkinson's disease is a slowly progressive degenerative disorder of the nervous system which affects the person's movement.

The symptoms start gradually from a tremor of one hand then progress to slowness of voluntary movement and increased muscle tone or stiffness (rigidity).

The tremor may eventually progress to the other hand and legs and it may also affect the jaws, tongue, forehead and eyelids.

Dopamine levels in a normal and a Parkinson's affected neuron.



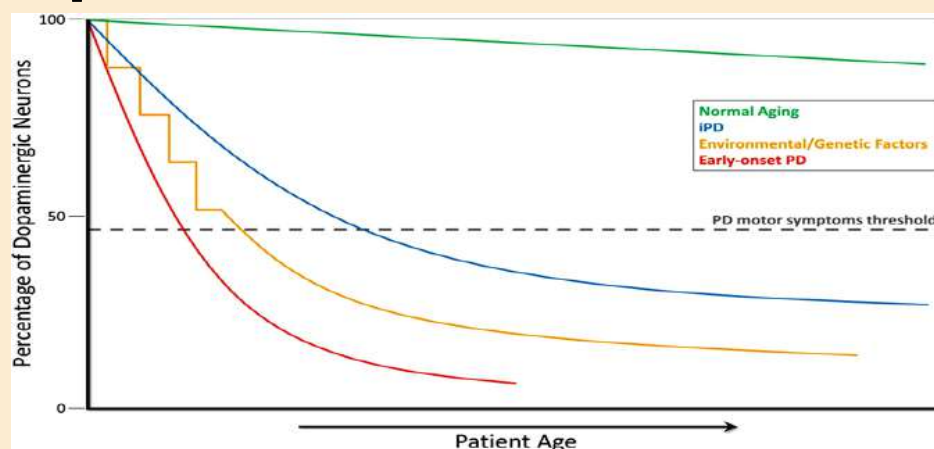
- Parkinson's disease is caused by a loss of nerve cells in the part of the brain called the substantia nigra.

- Nerve cells in this part of the brain are responsible for producing a chemical called dopamine.

- Dopamine acts as a messenger between the parts of the brain and nervous system that help control and co-ordinate body movements.

- As number of dopamine decreases, movements starts to become slow and abnormal

## Dopamine level



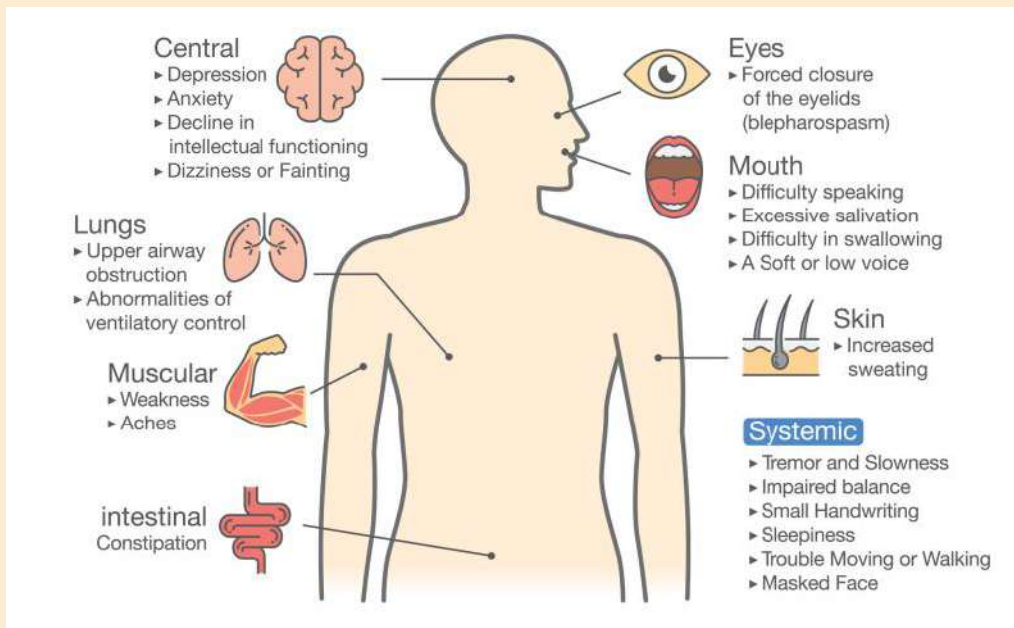
The graph above shows the imminent decline of dopaminergic neurons in the presence of Parkinson's disease group compared to normal aging group

## Statistics in Malaysia

	Deaths		Prevalence		DALYs	
	2016 counts	Percentage change in age-standardised rates, 1990-2016	2016 counts	Percentage change in age-standardised rates, 1990-2016	2016 counts	Percentage change in age-standardised rates, 1990-2016
Malaysia	514 (386 to 672)	19.9% (8.5 to 32.7)	19 586 (15 697 to 23 908)	26.4% (20.9 to 32.7)	9694 (7546 to 12 275)	19.1% (9.4 to 29.0)

The table above shows Deaths, Prevalence, and Disability-adjusted life-years (DALYs) for Parkinson's disease in 2016 and percentage change between 1990 and 2016 in age-standardised rates.

# SYMPTOMS OF PARKINSON'S DISEASE



## TREATMENT OF PARKINSON'S DISEASE

**Levodopa** is a drug used for patient that have this disease in order to increase the dopamine level. The levodopa itself is a precursor of the dopamine. Levodopa is effective in improving the symptom of Parkinson patient by reducing the tremor and muscle rigidity. Levodopa usually given in combination with carbidopa.

**Carbidopa** helps increase the effectiveness of the levodopa and reduce the side effect of the medication.

**Benzhexol** also use to treat the Parkinson disease. Benzhexol helps by reducing the unbalance activities of the cholinergic neurotransmitter. This medication might be used alone in mild cases or in case of levodopa is contraindicated. However, this medication is often not tolerated in elderly patients.

### References:

1. Parkinson's disease. Hector A. Gonzales-Usigli. Merck Manual Professional Version. May 2020. Available from: <https://www.merckmanuals.com/professional/neurologic-disorders/movement-and-cerebellar-disorders/parkinson-disease>.
2. MayoClinic.org. Parkinson's disease. Available from: <https://www.mayoclinic.org/diseases-conditions/parkinsons-disease/symptoms-causes/syc-20376055>
3. Parkinson's disease. National Health Service. Available from: <https://www.nhs.uk/conditions/parkinsons-disease/causes/>
4. KD Tripathi. Essential of Medical Pharmacology 7<sup>th</sup> edition. 2013. Page 425.
5. Global, regional, and national burden of Parkinson's disease, 1990–2016: a systematic analysis for the Global Burden of Disease Study 2016. Lancet Neurol 2018; 17: 939–53 Published Online October 1, 2018 [http://dx.doi.org/10.1016/S1474-4422\(18\)30295-3](http://dx.doi.org/10.1016/S1474-4422(18)30295-3).



# Role Of Trastuzumab In Breast Cancer Treatment

## How does Trastuzumab Works?<sup>2</sup>

Trastuzumab can help control the growth of cancer cells that contain high amounts of human epidermal growth factor receptor 2 (HER2).

Trastuzumab works by blocking the effects of HER2 and encouraging the immune system to attack and kill the cancer cells

HER2 is found in all human cells. It controls cell growth and repair.

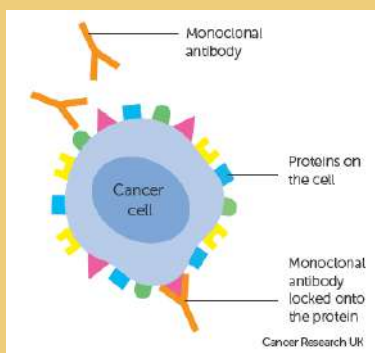
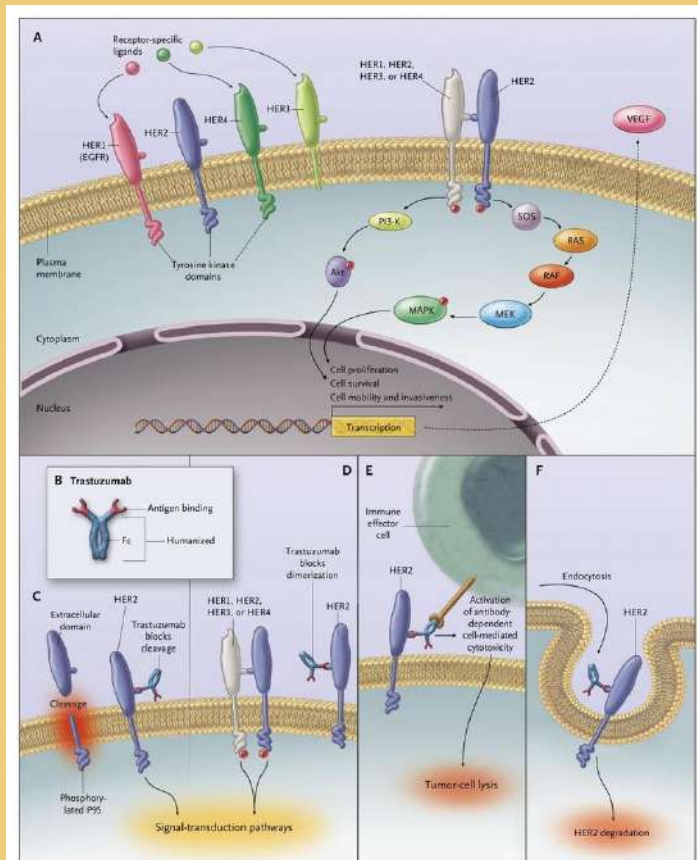
High levels of Her2 are found in some types of breast, oesophageal and stomach cancer which helps the cancer cells grow and survive.

These are known as HER2 positive cancers. About 1 in 5 breast and stomach cancers are HER2 positive.

## Brand Name of Trastuzumab



## Mechanism Action of Trastuzumab



# Trastuzumab

## Reconstitution

- **Reconstituted with only 20ml of Bacteriostatic Water For Injection (BWFI), USP , 1.1% benzyl alcohol preserved.**
- **If the patient has known hypersensitivity to benzyl alcohol, can use Sterile water for injection.**

## Further Dilution

- **Diluted in saline for IV infusion Add it to an infusion bag containing 250mg of 0.9% Sodium Chloride Injection,USP.**

## Administration & Infusion Rate

Route	
IV infusion	Loading dose 90min infusion
	Maintenance dose 30min infusion

## Storage & Stability

After reconstitution	RT (<25 °C)	Fridge (2-8 °C)
Bacteriostatic Water For Injection (BWFI)	■	28 Days
Sterile Water For Injection (SWFI)	Immediate use	

After dilution	RT (<25 °C)	Fridge (2-8 °C)
0.9% Sodium Chloride Injection, USP	■	24 hours

## Remarks

- **DO NOT SHAKE Trastuzumab as it sensitive to shear-induced stress.**
- **Slight foaming of the product is not unusual. Allow vial to stand undisturbed for 5 minutes and it will be back to normal.**

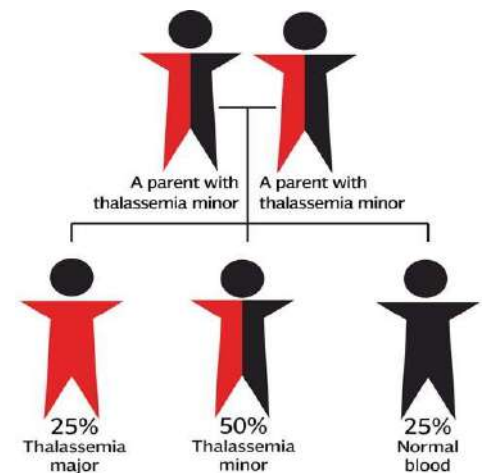
### Reference

1. Subramanian, A., & Mokbel, K. (2008). The role of Herceptin in early breast cancer. International seminars in surgical oncology : ISSO, 5, 9. <https://doi.org/10.1186/1477-7800-5-9>
2. Herceptin. NHS. <https://www.nhs.uk/conditions/herceptin/>
3. Herceptin. Product leaflet. FDA. [https://www.accessdata.fda.gov/drugsatfda\\_docs/label/2000/trasgen020900lb.htm](https://www.accessdata.fda.gov/drugsatfda_docs/label/2000/trasgen020900lb.htm)

# THALASSEMIA

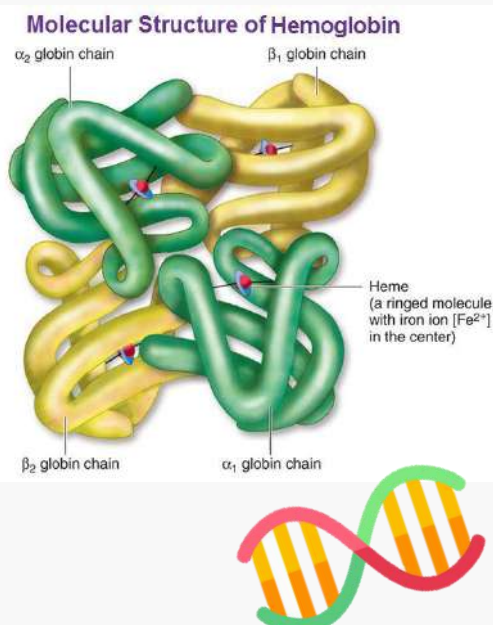
## “WHAT IS THALASSEMIA?”

According to Centers for Disease Control and Prevention (CDC), Thalassaemia is an inherited blood disorder where the body does not produce enough of protein called haemoglobin. Inherited mean it passed from parents to children through genes.

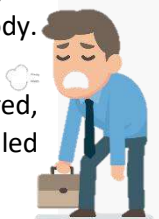


**THALASSEMIA is a Major Deadly Genetic BLOOD DISORDER**

## Haemoglobin structure in Thalassaemia



- Haemoglobin is an important part in red blood cells which transport the oxygen to all the cells in the body.
- It contains  $\alpha_2$  globin chain &  $\beta_2$  globin chain which make up the gene.
- A defect in either gene will lead to Thalassaemia.
- When there is not enough of haemoglobin, the body's red blood cells do not function properly as not enough oxygen is delivered to all of the body.
- These may cause a person to feel tired, weak or short of breath. This condition is also called as anaemia.



## Classification of type

Depend on:

1.

**Haemoglobin chain affected**

**Alpha Chain**

**Beta Chain**

2.

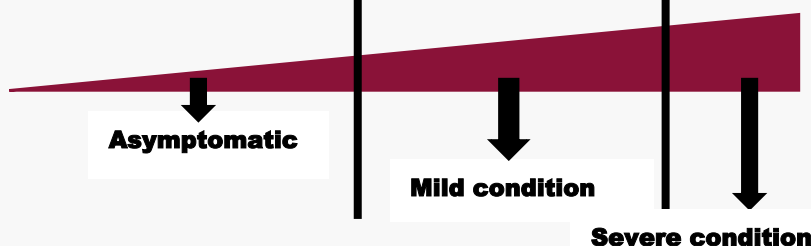
**Severity of Symptoms**

**TRAIT**

**MINOR**

**INTERMEDIATE**

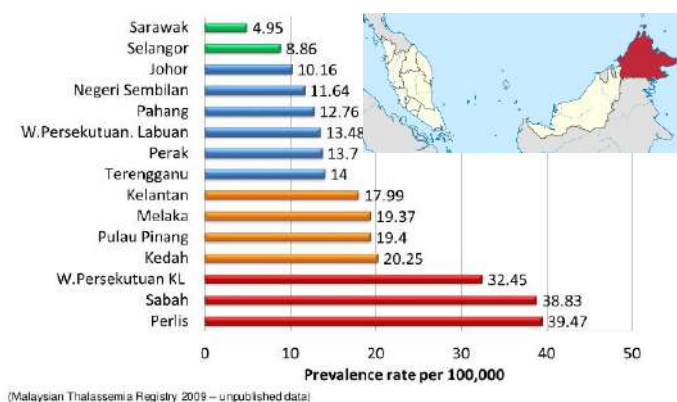
**MAJOR**



## Patient population in Malaysia

According to Clinical Practice Guideline Management of Transfusion Dependent Thalassemia, East Malaysian state of Sabah has the most number of registered patients at 1,272 with Kadazan-Dusun ethnic group contributing half of these affected individuals. Other studies also state that the prevalence of thalassemia records from the 2018 is 7,984 registered thalassemia patients in Malaysia. Sabah has the highest number of thalassemia patients which is 1,819 of 7,984 registered patients.

**Prevalance rate of thalassaemia patients per 100,000 population by states, Malaysia 2009**



Almost half of the affected individuals were from the indigenous ethnic group Kadazan-dusun. Although Sabah has the highest prevalence of thalassemia in Malaysia, the epidemiological studies to understand the sociodemographic profile is still lacking. By knowing the sociodemographic characteristics is important as this may aid in the planning of preventive measures to reduce cases in Sabah.

## Treatment of Thalassemia



1. **Hydroxyurea**, have shown to increase the amount of fetal hemoglobin in a patient.
2. **Desferrioxamine & Deferasirox** bind non-transferin bound iron and removal excessive iron in the body.
3. **Vitamin C** as supplements.



Introduce large amounts of Iron into blood. It may cause complication which iron overload.

## Surgical treatment



## References

1. Management of thalassaemia. Ministry of Health. Available from: <https://www.moh.gov.my/moh/resources/auto%20download%20images/587f136ce4807.pdf>
  2. Chin, J. G., Juliana, I., Hamid, A., Gunasagaran, K., Amir, J., John, P., Mangantig, E. (2019). Demographic and Socioeconomic Profile of Transfusion Dependent Beta-Thalassemia Major Patients in Sabah. Malaysian
  3. Journal of Medicine and Health Sciences, 15(11), 102–108.
  4. Ibrahim, H., Hassan, A., George, E., Sim, G. A., Othman, I. S., Mudla, I., & Hassan, H. (2009). Clinical Practice Guidelines: Management of Transfusion Dependent Thalassemia, 100. Retrieved from <http://www.moh.gov.my/penerbitan/CPG2017/8318.pdf>
  5. Salih, Y. (2014). Awareness of the Thalassemic Patients' Parents toward Thalassemia in Kirkuk City. Mosul Journal of Nursing, 2(2), 58–62.
- Tan, J. A. M. A., Lee, P. C., Wee, Y. C., Tan, K. L., Mahali, N. F., George, E., & Chua, K. H. (2010). High prevalence of alpha- and beta-thalassemia in the kadazandusuns in east Malaysia: Challenges in providing effective health care for an indigenous group. Journal of Biomedicine and Biotechnology, 2010(September 2010), 1–6.