

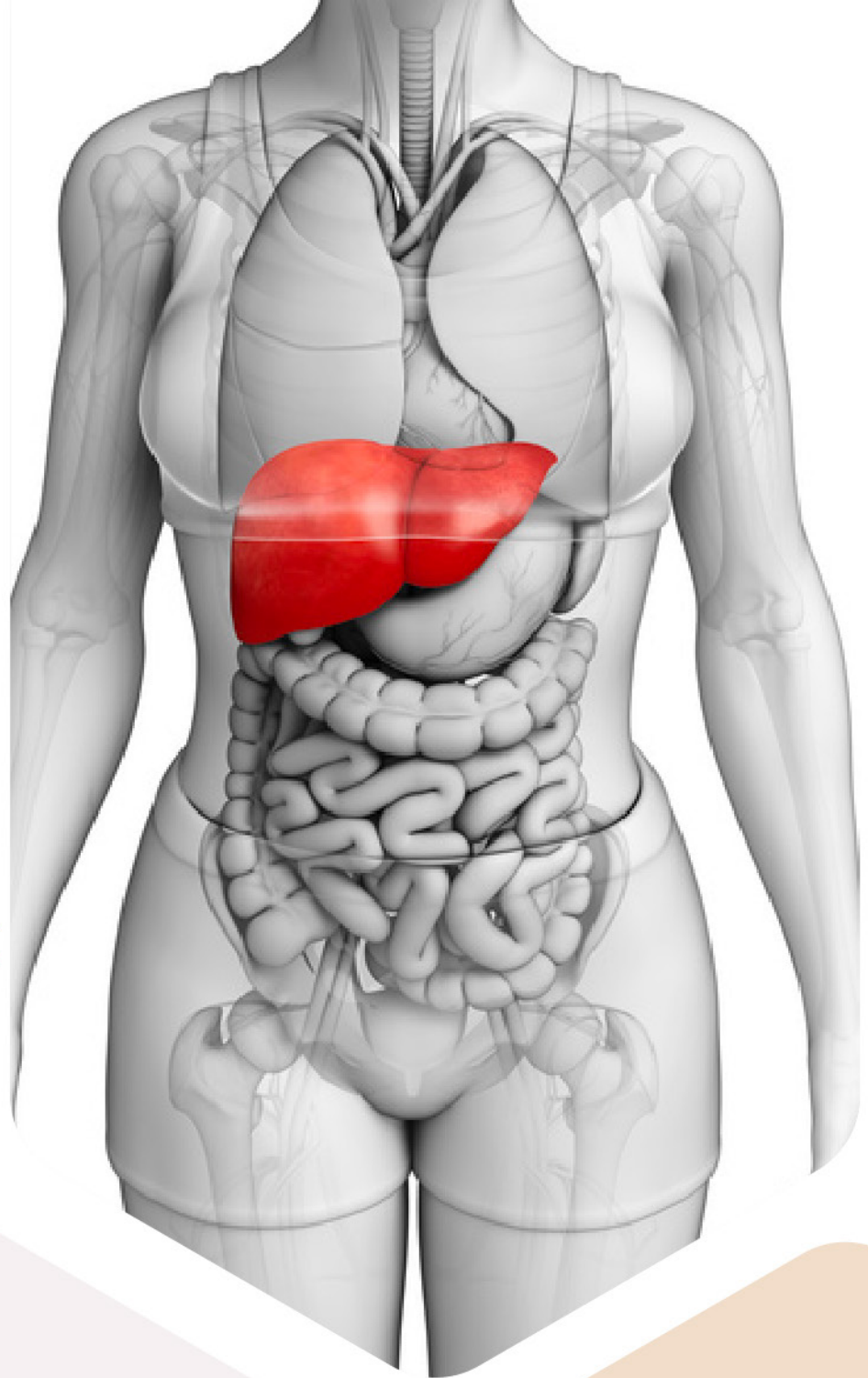
# *THE LIVER*

## THE BODY'S CENTRAL FACTORY

DR AMIR FARID ISAHAK

### *What's* **NEW?**

The liver is the body's busiest and most multi-tasking organ. It carries out more than 500 vital functions!



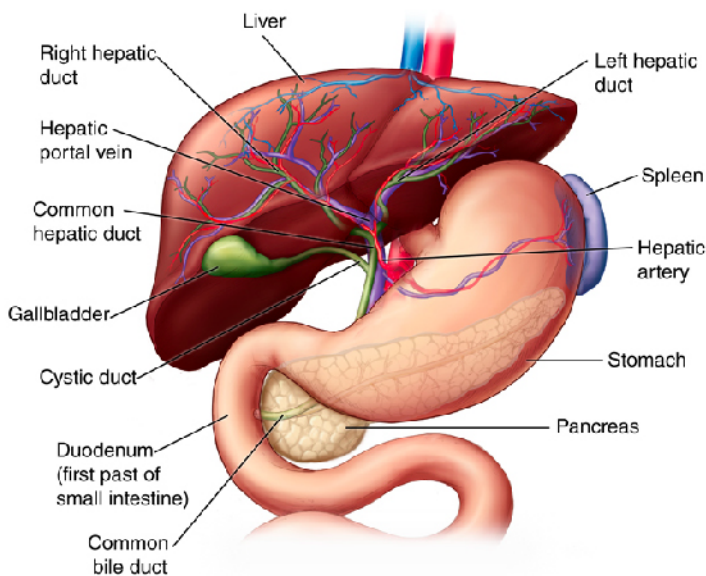
# WHAT & WHERE IS THE LIVER?

## THE LIVER IS THE BODY'S BUSIEST AND MOST MULTI-TASKING ORGAN

The liver is located mainly in the upper right part of the abdomen, beneath the diaphragm, and on top of the right kidney and intestines. Its left lobe sits over the stomach. It is a dark reddish-brown triangular-shaped organ that weighs about over 1-1.5kg in the adult. The liver is the largest internal organ of the body (the skin is the body's actual largest organ).







The liver consists of 2 main lobes. Both are made up of 8 segments that consist of 1,000 lobules (small lobes). These lobules are connected to small ducts (tubes) that connect with larger ducts to form the common hepatic duct. The common hepatic duct transports the bile made by the liver cells to the gallbladder and duodenum (the first part of the small intestine) via the common bile duct.

Because of its many important functions, it receives a lot of blood supply. It holds about 500ml (10-15%) of the body's blood supply at any time.

## What Are The Functions Of The Liver?



The liver carries out more than 500 vital functions! It regulates most of the substances circulating in the blood; produces many substances; detoxifies many toxins; and excretes bile, which helps carry away the waste products from the liver.

All the blood leaving the stomach and intestines pass through the liver. The liver processes this blood and breaks down the nutrients and manufactures various substances; and also metabolizes many drugs into active or inactive forms before or after they are used by the target organs. Some drugs and toxins are detoxified or rendered less harmful or are excreted through the bile.

### Some of the important functions include:

- Bile production and excretion (which helps carry away waste and break down fats in the small intestine during digestion)
- Excretion of bilirubin, hormones, and drugs
- Metabolism of fats, proteins, and carbohydrates
- Production and regulation of cholesterol
- Storage of glycogen (and reversion to glucose), vitamins, and minerals (including iron)
- Synthesis of plasma proteins, such as albumin, and clotting factors
- Synthesis of immune factors and removing bacteria from the bloodstream
- Blood detoxification and purification
- Enzyme activation

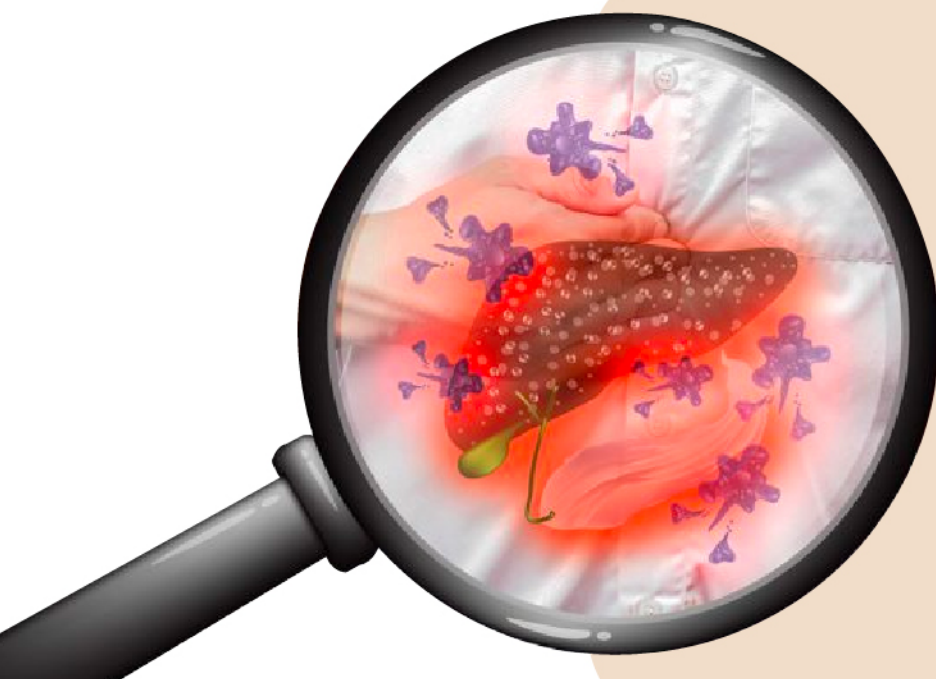


When the liver has broken down harmful substances, its by-products are excreted into the bile or blood. Bile and the by-products enter the intestine and leave the body in the form of faeces. Blood and the by-products are filtered out by the kidneys, and leave the body in the form of urine.

So the liver is indeed a very busy organ, with so many functions. It is an essential organ that we cannot live without. Because of this, it is important that its health is kept optimum.

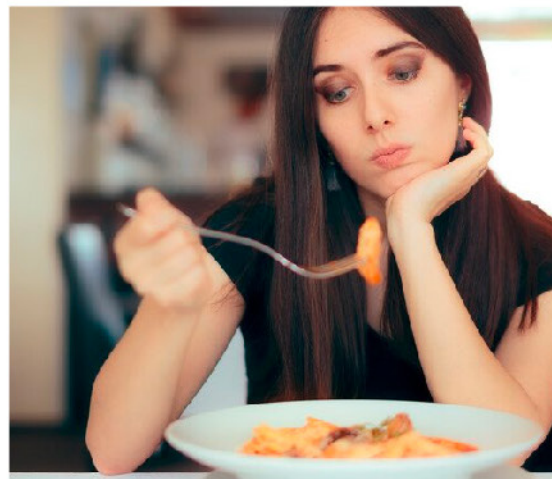
Often it is overworked and stressed. In the beginning, it just works harder to cope with the increased workload, but after sometime, it is not able to cope and starts to become damaged.

Once it is damaged, the problem worsens because it may not be able to cope with even the normal workload.



**DR AMIR FARID ISAHAK**

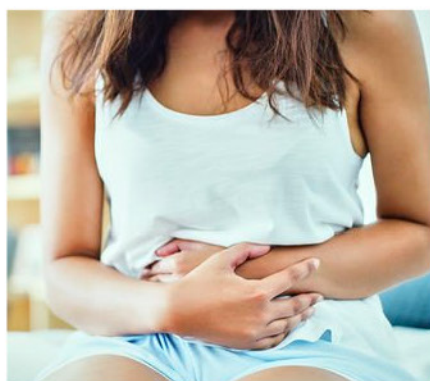




## WHAT HAPPENS & HOW DO WE KNOW IF THE LIVER IS OVERWORKED?

In order to protect the body, the liver has a large reserve capacity, meaning it can work much more than normally required in the healthy person. Because of this, symptoms do not appear until after the liver stress is prolonged, or severe. So if we wait till symptoms appear, it may be too late.

The signs and symptoms of the overworked or diseased liver are related to its major functions, as listed above.



So what are the symptoms of an overworked or unhealthy liver?

These may include:

- ✓ **Loss of appetite**
- ✓ **Chronic fatigue**
- ✓ **Nausea or vomiting**
- ✓ **Skin and eyes that appear yellowish (jaundice)**
- ✓ **Itchy skin**
- ✓ **Dark urine color**
- ✓ **Pale stool color**
- ✓ **Tendency to bruise easily**
- ✓ **Abdominal pain and swelling**
- ✓ **Swelling in the legs and ankles**

If you have any of these symptoms, you should see a doctor or health practitioner as soon as possible.

Liver disease can be inherited (genetic) or caused by a variety of factors that damage the liver, such as prescription and OTC drugs (excess paracetamol intake is a common cause), herbal medicines, infections (viruses, bacteria, and parasites), alcohol consumption, obesity and cancer (primary or secondary).

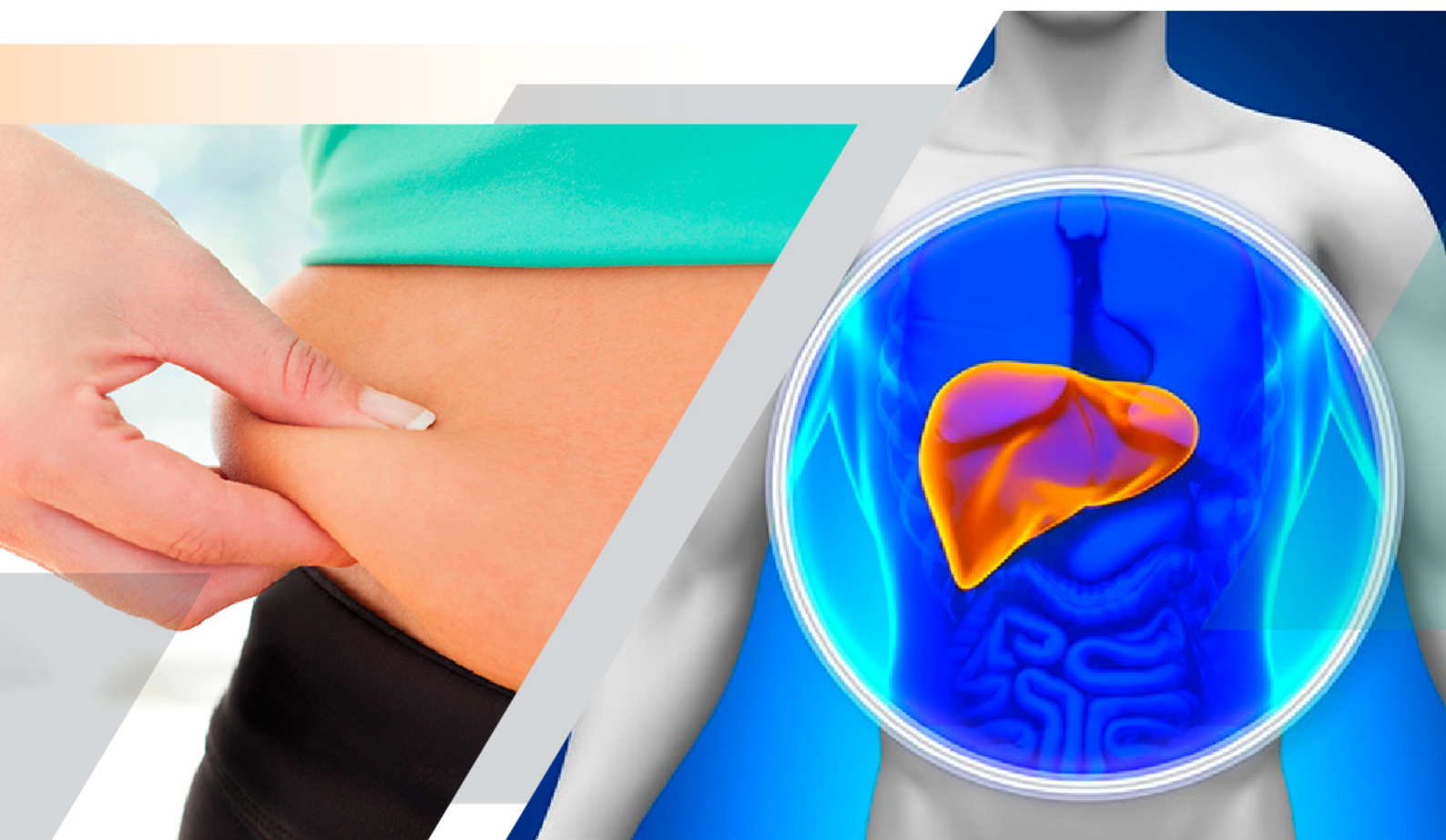
In order to avoid discovering

liver problems too late, it is best to do liver function blood tests at least once a year once you are over 40, or earlier if you are in the high-risk group. The earliest sign of liver stress (overworked) is the elevation of one or more of the liver enzymes. If unchecked, the liver enzymes can become very high, the protein levels become low or unbalanced (poor or abnormal production) and the bilirubin level will start to climb.

If you are obese, drink alcohol regularly, take statin drugs (to reduce cholesterol), take

herbal medicines, or have viral hepatitis, you should do the test regardless of your age.

Obesity increases the risk of non-alcoholic fatty liver disease, which is a common disease nowadays because obesity is very common! Chronic alcohol consumption may lead to alcoholic liver disease, which is even more dangerous and may progress to cirrhosis (scarring) and liver failure.





**Statin drugs are now the most common cause of liver stress (as shown by elevated liver enzymes). Many other drugs can also stress the liver. For some, the damage may be significant enough to necessitate stopping the drugs.**

Herbal medicines are notorious for causing liver stress. Often it is not the herbal medicine itself that causes the problem, but contamination from toxins and heavy metals because usually these herbal medicines are not produced under the stringent standards required for drugs. Some herbs may be toxic to the liver, especially if taken in high doses.



## WHAT HAPPENS IF YOU HAVE LIVER DISEASE?

If the liver disease is severe enough, more tests are done (ultrasound, MRI, CT scan and biopsy) to achieve the most accurate diagnosis and assess the severity, in order that the most appropriate treatment can be offered.

If left untreated, over time continued liver damage from many causes can lead to cirrhosis, and finally to liver failure (a life-threatening condition). However, mild and early liver diseases are mostly

reversible, provided the cause is removed and treatment is given early.

Therefore, it is important that the liver problem is recognized early so that the cause can be identified and removed if possible, and appropriate treatment is started. If these are done, then in most cases the liver health can be improved or restored. You should of course be under proper medical care.



## WHAT IS THE TREATMENT FOR LIVER DISEASE?

Treatment for liver disease depends on the diagnosis. Some liver problems can be treated with lifestyle modifications, such as stopping alcohol use or simply losing weight. Other liver problems may be treated with liver tonics, nutritional or herbal medications, prescription drugs, or may require surgery. Monitoring of the liver function is done regularly.

If the treatments for severe liver disease and liver failure fail, the patient may ultimately require a liver transplant.





# How To Help Our Liver Stay Healthy?

The most important steps to keep our liver healthy are:

- ✓ Lead a healthy lifestyle which includes sufficient sleep.
- ✓ Healthy diet - avoid red meat, trans-fats, processed carbohydrates and foods with high-fructose corn syrup.
- ✓ Exercise 30 to 60 minutes three to four times a week at a moderate intensity.
- ✓ Maintain a healthy weight. If overweight or obese – reduce calories and lose weight.
- ✓ Avoid or minimize alcohol intake.
- ✓ Avoid habitual consumption of paracetamol, other painkillers and anti-inflammatory drugs. If these are prescribed to you, make sure your doctor monitors your liver function.



There are some nutrients that are essential for liver health, while some spices and herbs can help too.

Among the herbal medicines for liver disease that is gaining popularity is the extract of the Taiwanese AC mushroom (***Antrodia cinnamomea***, also called AC fungus). It is used in the prevention or treatment of various diseases of the liver (including hepatitis B), and also kidney disease, food and drug intoxication, diarrhea, abdominal pain, hypertension, itchy skin, and tumors.



**Antrodia  
Cinnamomea**



Studies have shown promising results in the treatment of various types of cancer, hypertension, and alcohol hangover, and may also help in treating obesity and diabetes. Laboratory studies show it has strong antioxidant and anti-inflammatory properties.

**Apart from that, the important nutrients include vitamins A, B (especially B12), D and E; and the herbs and spices include milk thistle, artichoke leaf, turmeric root, dandelion root, yellow dock root, beetroot, radix bupleuri root extract, astragalus membranaceus root extract and ginger.**

Of these, turmeric has gained most attention in the last decade because of its many health benefits, not only for the liver, but for the entire body.

Turmeric has curcuminoids (the most important is curcumin) which have powerful antioxidant and anti-inflammatory actions. These can protect the liver from harmful free radicals, and reduce inflammation brought about by many of the causes of liver damage. Chronic inflammation and oxidative stress (excess free radicals) are the underlying biochemical causes for cellular damage in most other diseases and also in ageing.

Turmeric extracts can reduce the risk of fatty liver which affects almost half of us to a certain degree and are especially beneficial for arthritis (as good as using drugs) and other causes of chronic pain.



**“ Curcumin has been widely studied and found to be good for the brain, heart, joints, and may reduce the risk of certain cancers (eg. colorectal cancer). It also has anti-ageing effects, and slows down age-related organ degeneration. ”**





# THINGS TO KNOW ABOUT FATTY LIVER



“**Liver** can regenerate itself, hence does it mean we do not have to take care of it so much? The answer is no, we should not neglect our liver health as it carries out numerous functions to our body (as mentioned in the previous article).”

Fatty liver is one of the most common liver disorders.

There are 2 types of fatty liver, the first type is Non-Alcoholic Fatty Liver Disease (NAFLD). According to research from the World Journal Gastroenterology, NAFLD, which is one of the most common liver disorders, affects up to 25% to 30% of the population in the United states and

Europe. Another study in Malaysia showed that older people (53-60 years old) have a higher prevalence of NAFLD.

Whereas the second type of fatty liver is Alcoholic Fatty Liver Disease (AFLD). According to statistics in 2010, the prevalence of AFLD is approximately 2% of the United State. People might have a misconception that heavy alcoholic drinkers will have higher risk of liver disease, however looking at the statistics, the fact is NAFLD is more prominent than AFLD.

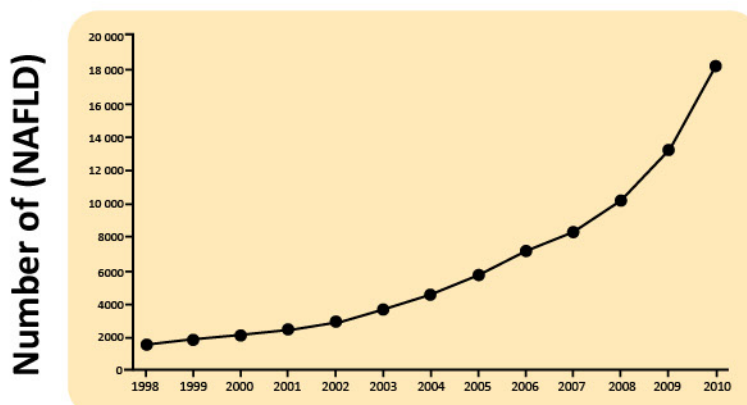


Table below shows the differentiation between 2 types of fatty liver.

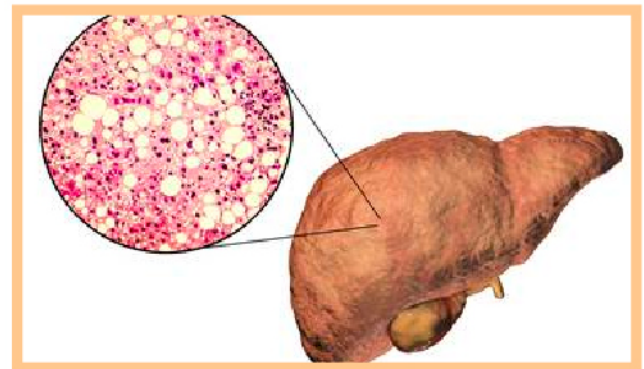
	Non-Alcoholic Fatty Liver Disease (NAFLD).	Alcoholic Fatty Liver Disease (AFLD).
Causes	<ul style="list-style-type: none"> <li>• Unhealthy lifestyle</li> </ul>	<ul style="list-style-type: none"> <li>• Excessive alcohol use over a long period of time</li> <li>• Genetic</li> </ul>
Who is at risk	Those who is having <ul style="list-style-type: none"> <li>• high blood cholesterol</li> <li>• high blood glucose disease</li> <li>• obese</li> <li>• hypertension</li> <li>• heart disease</li> </ul>	<ul style="list-style-type: none"> <li>• Heavy drinker</li> <li>• Family medical history of liver disease</li> </ul>
Consequence	Both can lead excess accumulation of fat in the liver, causing inflammation and even scarring. If left untreated, scarring tissues will replace liver cells and lead to cirrhosis, this will cause deterioration in overall liver function and even liver cancer.	





Some signs and symptoms of fatty liver are lethargy and abdominal discomfort (mainly on the right side), but mostly are symptomless.

Frequent medical checkup is required to ensure the liver is always in good condition, as most of the fatty liver diseases are found through liver function test and a healthy liver should have enzyme reading as below:



Laboratories Test	Normal Level
Alanine Aminotransferase (ALT)	Male : 0 – 40 U/L Female : 0 – 3 U/L
Alkaline Phosphatase (ALP)	Male : 53 – 128 U/L Female : 42 – 98 U/L
Aspartate Transaminase (AST)	Male : 0 – 40 U/L Female : 0 – 31 U/L

**Some of the healthy lifestyle to maintain healthy liver are:**



## 1 Healthy Diet

- Avoid taking high fat and high cholesterol food, limit sugar and salt intake, consume more high fiber food.
- The Dietary Reference Intake (DRI) of fat is 20-35% of total calories and mainly are monounsaturated and polyunsaturated fat.

## 2

### Lose weight

- Obese is highly associated with fatty liver, hence it is best to maintain a normal body mass index (BMI) which is  $18.5 - 24.9 \text{ kg/m}^2$ .
- Maintaining a low body fat percentage can also reduce the risk of fatty liver, especially visceral fat
- American Council on Exercise suggests that the acceptable range of body fat percentage for women and men are 25-31% and 18-24% respectively.



## 3



### Physically active

- Increase physical activity can help to reduce weight and also boost metabolism as metabolic disorder is one of the main causes of fatty liver
- Aim to have 30 minutes of moderate intensity exercise for 5 times weekly, or a cumulative of 150 minutes of moderate intensity exercise weekly

## 4

### Reduce consumption of alcohol



- Limit alcohol intake can help to prevent alcoholic fatty liver
- Men can take up to 2 drinks daily, whereas women can 1 drink daily
- Example of a drink would be 12 ounces (355 milliliters) of beer and 5 ounces (148 milliliters) of wine



# FASCINATING FACTS ABOUT

# Liver



1

## Liver Has Self-regenerating Ability

If each organ has its own identity as a superhero, liver is definitely the Wolverine. Liver has an incredible ability to regrow from as little as 25% of its original tissue. It only takes around 2 weeks to completely regrow. Therefore, liver donors can donate over half of their liver to someone who needs a transplant.

2

## Liver act as the “store-room” of nutrient

When there is excessive glucose in the blood, some of the glucose will be converted to glycogen and stored in the liver as an energy reserve. Lipid-soluble vitamins (A, D, E & K) and some water-soluble vitamins such as vitamin B12 are also stored in the liver. Besides, iron is stored in a protein named as ferritin, which is produced and contained in the liver.

3

## Impaired liver function can cause damage to the brain

One of the important functions of the liver is to filter harmful substances from the blood. If the liver is badly damaged and unable to filter the blood, toxins in the bloodstream can enter the brain and cause hepatic encephalopathy. Hepatic encephalopathy is referred to the decline in brain function that occurs as a result of severe liver disease. This condition can cause unpleasant symptoms such as seizure, confusion, forgetfulness, and possibly even coma.



4

### Some medicines are useless without liver to process them

Many medicines are administered in inactive form, they need to be converted into active form by the liver, so that our body can utilise the medicine. Without liver, some of the medicines do not work and are just being excreted by the body as a waste product. For example, paracetamol and aspirin, the painkillers that we commonly use are required to be activated by the liver.

5

### Liver helps in hormone metabolism

Liver is the major organ for the breaking down of excessive hormones in the body such as thyroid hormone, estrogen and androgen. For example, if the liver is overworked and incapable to breakdown excessive androgen, problems such as acne, hair loss and facial hair in women may occur.

6

### Liver gives color to our stool

Have you ever wondered why the stool is dark brown in color? This is because the stool contains bile, a dark greenish-yellow liquid which is produced by the liver. Bile helps to carry away waste products and breakdown fats in the small intestine during digestion. An adult produces 400ml to 800ml of bile daily. In the case when the stool color changes to very light color, there may be problems with insufficient bile excretion by the liver or obstruction of bile duct.







# HEALTHY DIET, HEALTHY LIVER, HEALTHIER YOU!

Liver undoubtedly plays a vital role in maintaining metabolic functions in our body. HOWEVER, do you realise that your liver is actually depending on you? Even though it's hidden away inside your body, the truth is they communicate with you. HOW? If you practice a good diet, your liver will 'tell' you by ensuring that your liver manages to function well and you do feel great entirely. On the other hand, if you do not care about your diet, your liver will literally be vulnerable and will result in various health diseases.

**Thus, it is important to know what are the best nutrients and herbs that are beneficial to your liver! Here are some of the great nutrients that you can include in your diet:**



## MILK THISTLE

- Milk thistle or also called Mary thistle is a flowering herb which is native to Europe. It is often promoted for its liver-protecting properties and gallbladder protection.
- Besides, it has also been used as a complementary remedy by people who have liver damage due to various conditions such as alcoholic liver disease, non-alcoholic fatty liver disease, hepatitis and many more.
- One of the active ingredients extracted from the plant seed is silymarin. Silymarin is a type of flavonoid which contains antioxidant properties.
- Moreover, previous study demonstrated that Silibinin, a major constituent of silymarin has been shown to protect the liver through a few mechanisms.



- Bupleuri or known as Bupleurum is a natural remedy of Traditional Chinese Medicine with high value of its detoxification abilities for more than 2000 years.
- The roots of this herb are often used as medicinal parts due to its strong anti-inflammatory, antiviral, hepatoprotective, and antiproliferative properties which help in countless health conditions.
- All of these effects are believed to be associated with triterpenoid saponins, polyacetylenes, flavonoids, lignans, fatty acids, and sterols from this plant.
- Previous research has shown that saikoponins in Bupleuri might assist in protecting against liver injury by regulating intracellular calcium levels.



## BUUPLEURI

## ASTRAGALUS

- Astragalus, or known as huáng qí among Chinese, is an ancient root of herb that has been widely used for centuries due to its immune-boosting and anti-inflammatory effects.
- The roots of this plant remarkably contain a lot of active compounds like flavonoids, sakoponins and polysaccharides that are believed to be responsible for its potential benefits.
- Apart from that, Astragalus might improve quality of life and give protection against liver injury by regulating intracellular calcium levels.



## DANDELION

- Dandelion or also known as pu gong ying is native to Europe but found throughout mild climates of the Northern Hemisphere.
- Moreover, in traditional Chinese and Native American medicine, dandelion root has been used to treat stomach and liver conditions for periods of time.
- Previous study has found that dandelion showed a protective effect on liver tissue in the presence of toxic substances and stress.
- This effect is associated with the dandelion's antioxidant content which assists against oxidative stress in liver tissue.







## ARTICHOKE

- Artichokes originated in the Mediterranean and a type of thistle even though they are always mistakenly classified as vegetables.
- It has been used for centuries for its potential benefits and due to its high amount of compounds such as cynarin and silymarin found in the plant, artichoke now is also famous as a supplement.
- Furthermore, artichoke aids in removing harmful toxins from the liver by increasing the production of bile.
- One study indicated that artichoke extract reduced liver inflammation and less fat deposition after 2 months.

## The Launching of Blockbuster product of the year **LIVEON**

22<sup>nd</sup> August 2020

Introducing Wellous® blockbuster product of the year- LIVEON, the age-reversing beverage! Wellous has spent 13 years of research and development with world-class researchers to create the 21st century ultimate anti-ageing formula.

Natural Formulation with World-Patented Ingredients LIVEON contains 4 internationally-patented ingredients extracted with patented technologies, and added with 7 supporting potent antioxidants, helping one to achieve their optimal health with the ultimate anti-oxidation, anti-glycation and anti-inflammation formulation.

LIVEON is an ideal on-the-go fruity flavoured beverage that helps you to achieve youthful and revitalised skin and body from the inside out!





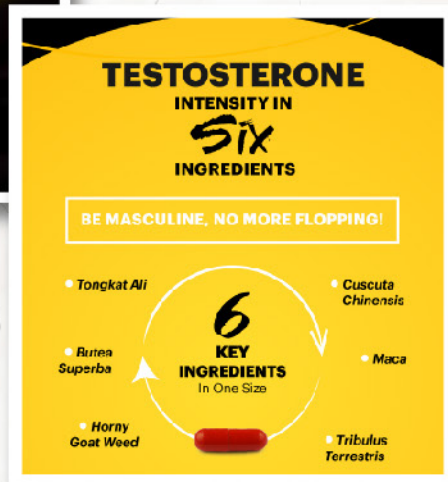


## Men's Health Product Launch EROJAN

10<sup>th</sup> September 2020

Wellous® has launched the long awaited product dedicated for men- EROJAN! EROJAN is an energy booster made from 6 local natural herbs, helping to reverse the signs of low energy in men who have hit middle-age including less active, lethargic, increased body fat, depression and more.

EROJAN, the natural energy booster that keeps your vitality optimum, unleash the internal power in you!



## The Launching of First Kids' Product ElderBerry + COLOSTRUM

16<sup>th</sup> September 2020

The first made for kids' product ElderBerry + COLOSTRUM under Wellous's new series of KidAone has been successfully launched!

The product contains world-patented ingredients ElderCraft®, ColostrumOne™ and PUREWAY-C®, forming a protective shield to safeguard the growth of your kids by boosting their immune system! Ensure the happiest childhood for your kid by staying away from sickness with strong immune system!







# LIVEON Grand Launching Event

29<sup>th</sup> September 2020

One month since the soft launch of Wellous® blockbuster product of the year, the official product launching event has been successfully hosted on 29<sup>th</sup> September. The event saw over 100 experts and doctors from health and medical fields, celebrities and key opinion leaders (KOL), media partners from online and offline platforms.



Wellous® also announced the ambassador for LIVEON Reviving DNA, Lynn Lim during the event. Lynn generously shared her thoughts towards beauty and age, as well as her secrets to achieving youthful skin.

In addition to announcing the first ambassador ever for Wellous®, an astonishing opening ceremony, graceful dance performance, as well as inspiring testimonies and sharing were seen throughout the event.



Photo-worthy corners and areas were meticulously decorated for attendees to take amazing photos and check-in, including exquisite product display, detailed information of the four key patented ingredients and seven potent supporting antioxidant ingredients, counting in many interesting ageing quotes as well!



LIVEON product sharing was led by Wellous® Product Development Specialist, Dr. Sandy Ong, explaining about human ageing process and the benefits of LIVEON's ingredients thoroughly. A health forum continued the flow, with invited guests to the stage, Wellous® Medical Advisor, Dr. Amir Farid Isahak and Wellous® Anti-ageing and Wellness Advisor, Dr. Carmen Ng. They emphasised on the ageing issues as well as the differences between chronological age and biological age in human.

Another highlight of the event was undeniably the exciting announcement of the LIVEON sales hit worth RM5 million within the first month since its soft launch! CEO of Wellous®, Racheal Tan was invited to share the moment of happiness on stage. The event ended gracefully with the audience mingling around and took amazing snapshots with the product.

