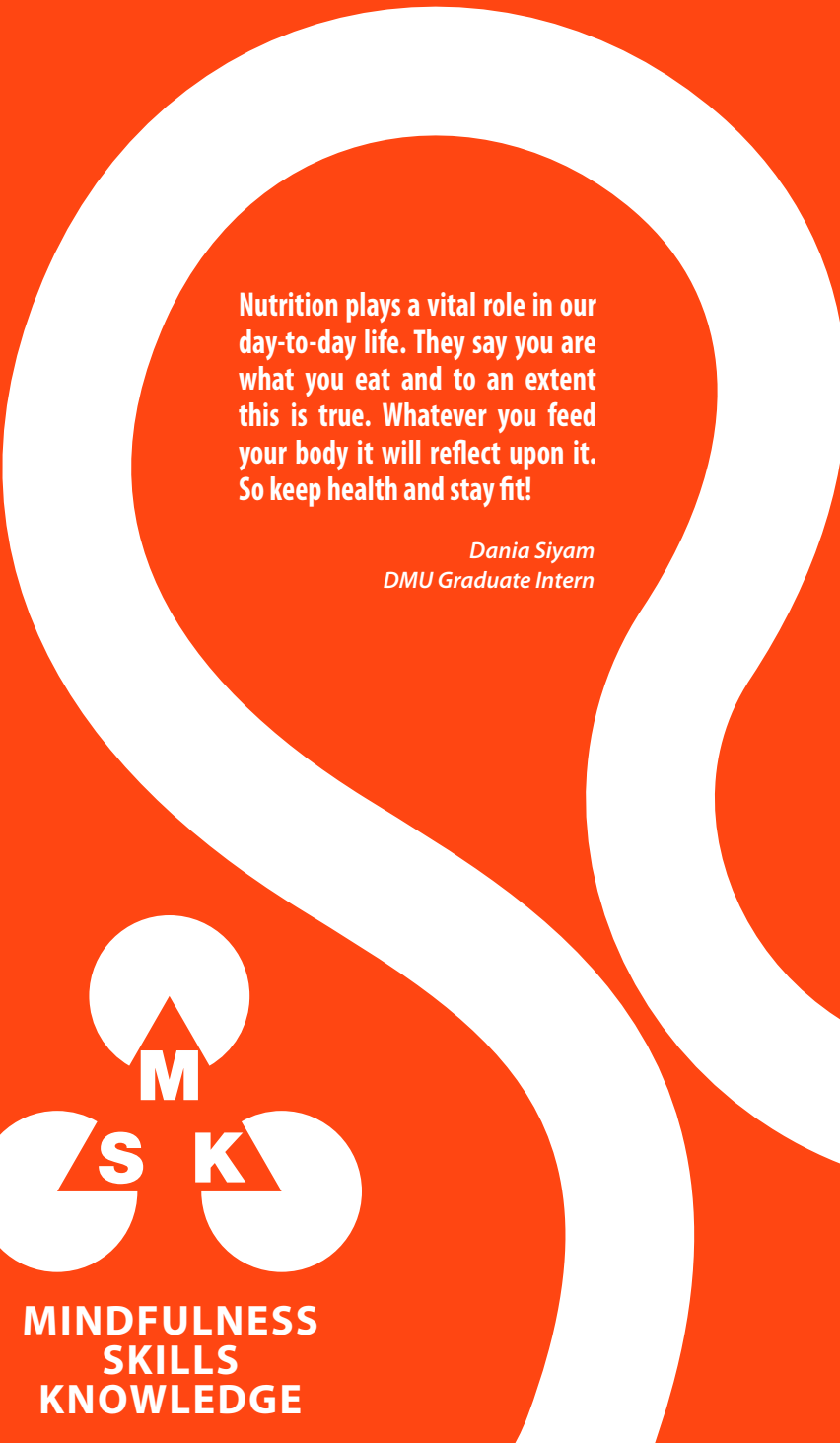


UNDERSTANDING ARTHRITIS AND NUTRITION

DMU GRADUATE CHAMPIONS INTERN
Dania Siyam



MSK[®]
MUSCULOSKELETAL
community projects



Nutrition plays a vital role in our day-to-day life. They say you are what you eat and to an extent this is true. Whatever you feed your body it will reflect upon it. So keep health and stay fit!

Dania Siyam
DMU Graduate Intern



**MINDFULNESS
SKILLS
KNOWLEDGE**

WHAT IS IN THIS BOOKLET?

Arthritis and other MSK conditions affect approximately 10 million adults and 15,000 children in the UK. The cause is still unknown and there is no known cure, however some things have been shown to relieve the symptoms, apart from medication. A healthy lifestyle, including a balanced diet can be beneficial.

This booklet will explore the link between nutrition and Arthritis/MSK conditions, as well as showing how important a healthy lifestyle is.

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WHAT IS ARTHRITIS?

Arthritis is a condition, which causes pain and inflammation in the joints. The cause is still largely unknown, despite extensive research. Arthritis is degenerative and there is no cure, although some drug treatments can slow the onset of symptoms and reduce flare ups.

There is a popular misconception that Arthritis only occurs in elderly people, however, this condition can affect any age group and can also occur in children. Around 15,000 children suffer from arthritis in the UK.

There are many other types of MSK conditions related to arthritis such as Lupus, Gout, Reactive arthritis and nearly two hundred more.

The 2 most common types of arthritis are:

- Osteoarthritis
- Rheumatoid Arthritis

OSTEOARTHRITIS (OA)

Osteoarthritis is known to be the most common type of arthritis in the UK, with around 8 million people currently affected. This type of arthritis is most common in adults in the late 40s and over. It is known to be more common in females than males and in patients who have family history. Onset of this condition may also be caused by trauma or injury to the joints.

It is most commonly known that Osteoarthritis affects the smooth cartilage lining of the joints. Loss of this smooth muscle causes movement to be more difficult for the patient resulting in pain and stiffness. Loss of cartilage causes bone to bone rubbing leading to shape alteration of the joint.

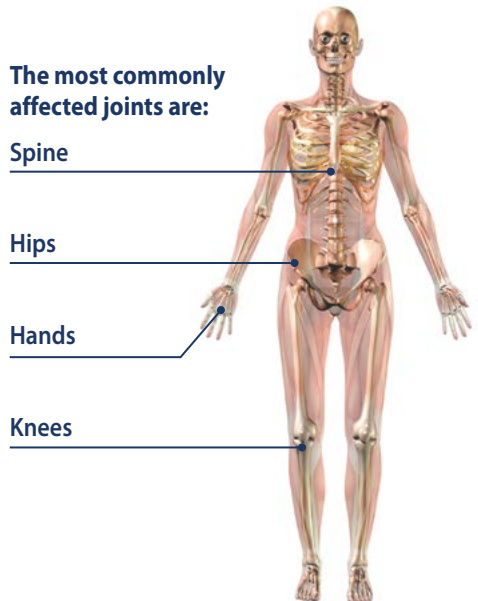
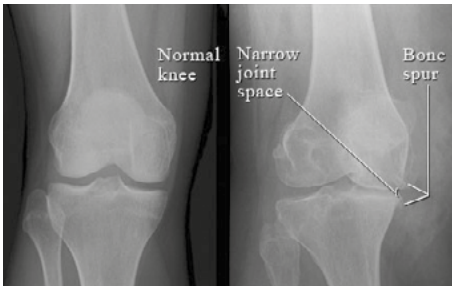
The most commonly affected joints are:

Spine

Hips

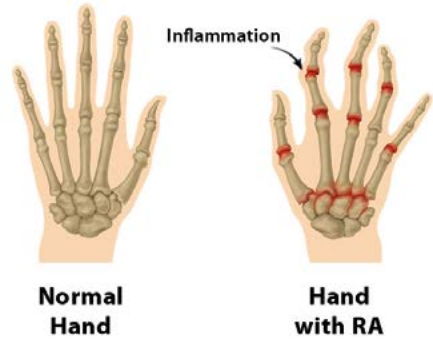
Hands

Knees



RHEUMATOID ARTHRITIS (RA)

Occurs in older people, usually onset occurs between the ages of 40 and 50yrs. Women are 3x more at risk of developing Rheumatoid Arthritis. Unlike Osteoarthritis, this condition is an autoimmune disorder causing inflammation to the joints and leading to pain and swelling. Long term RA may cause bone and cartilage breakdown and development of tissue and organ problems.



8.75 MILLION

People in the UK have visited their GP for treatment for osteoarthritis.

400,000 ADULTS

Have Rheumatoid Arthritis in the UK.

OVER 100,000

GP Consultations for MSK conditions in the UK every day.

15,000 CHILDREN

Have Juvenile Idiopathic Arthritis in the UK.

All statistics from Arthritis Research UK's Key facts publication - *Arthritis in the UK, facts and statistics*



CAUSES AND SYMPTOMS

POSSIBLE CAUSES

While the ultimate cause of arthritis is still not fully understood, there are several known reasons why people develop some form of arthritic condition. These are:

Injury

Trauma or injury to the body increases the chances of developing arthritis, partly due to joint and joint tissue damage.

Abdominal Metabolism

This usually causes gout as a result of an unhealthy diet or prolonged obesity.

Hereditary Genetics

Previous family history of arthritis and other MSK conditions may increase the risk of the person developing some form of arthritis.

Infections

Infections caused by certain pathogens can cause conditions such as Lyme disease. Infections play an important role in the development of arthritis.

Immune System Dysfunction

An over-active auto immune system is closely linked with conditions such as Rheumatoid arthritis and Systemic Lupus Erythematosus (SLE).

SYMPTOMS

While each form of arthritis comes with it's own unique symptoms and indicators, there are several which are common to most if not all cases. These are:

Pain

Usually a dull ache that permeates the body or a sharp stabbing pain in the affected joint.

Swelling

Caused either by an over-active auto immune system response or by damaged tissue around the joints.

Stiffness

Linked with swelling around the joints which restrict the movement range, leaving the joint feeling stiff.

Lack of Joint Mobility

Joint mobility is restricted either through swelling of the joint, or through damaged bones, tissues or ligaments around the joint.

NUTRITION

Nutrition is a vital element in our daily life, as our diet plays a very important role in maintaining our health. It is essential that we have a balanced diet; too much of one food type can effect our body. Not eating enough food, even if it is healthy, can cause serious weight loss and all the health problems associated with it. Eating too much, especially unhealthy food causes obesity and all the health problems associated with that.

Obesity also puts extra pressure on your weight bearing joints, which is not ideal for sufferers of arthritis or other MSK conditions. The body requires a wide range of vitamins and minerals. These can all be obtained from a healthy diet, allowing the body to heal itself and maintain a healthy balance.



NUTRITIONAL FOOD GROUPS

All foods can be broken down into five major types. Each type provides your body with something that it needs. It's essential to have a balance of these groups in your diet to maintain a healthy body.

CARBOHYDRATES

These are the body's main source of energy. They are important for brain, kidneys, heart and central nervous system. Foods high in carbohydrates include bread, pasta, potatoes, cereal, rice, grains, wheat.

PROTEIN

Protein is essential for the body to repair it's bones, muscles and other tissues. Protein rich foods include lean meat, fish, eggs and nuts.

FATS AND SUGAR

These must be consumed in moderation as too much is very harmful, although some fats such as olive oil can be beneficial. Foods high in sugar include chocolate, sweets, fizzy drinks.



“Although there is no cure, eating a healthy, balanced diet can usually reduce the symptoms of arthritis. ”



FRUIT AND VEGETABLES

Provide the body with essential vitamins and minerals such as vitamin C. It is also known to be a great source of fibre. Different vegetables have different minerals, such as bananas which are high in potassium, carrots are rich in vitamin A. Fruits also contain a variety of vitamins and minerals, as well as a natural sugar called fructose. This is absorbed by the body quicker than processed sugar (sucrose) and is more beneficial. All fruits and vegetables retain more of their goodness when eaten raw, but even cooked are very beneficial.

DAIRY FOODS

These provide the body with calcium, vitamin D, potassium and other vital nutrients which are used to improve bone strength and density. They also improve dental health. Dairy foods include milk, cheeses and yoghurt.

BENEFITS OF NUTRITION FOR ARTHRITIS AND MSK CONDITIONS

Although there is no cure for arthritis, the symptoms can be reduced through eating certain foods and maintaining a balanced diet. As Arthritis is the inflammation of the joint, certain foods are known to be anti-inflammatory and fight inflammation thus reducing symptoms such as pain and swelling.

It is well known that fish is very important and must be consumed at least twice a week. Fish is one of the main sources of Omega-3 which is beneficial due to its proven anti-inflammatory factors. It has the ability to fight inflammation and protect the body. Omega-3 has been shown to have a positive effect on RA by reducing inflammation.

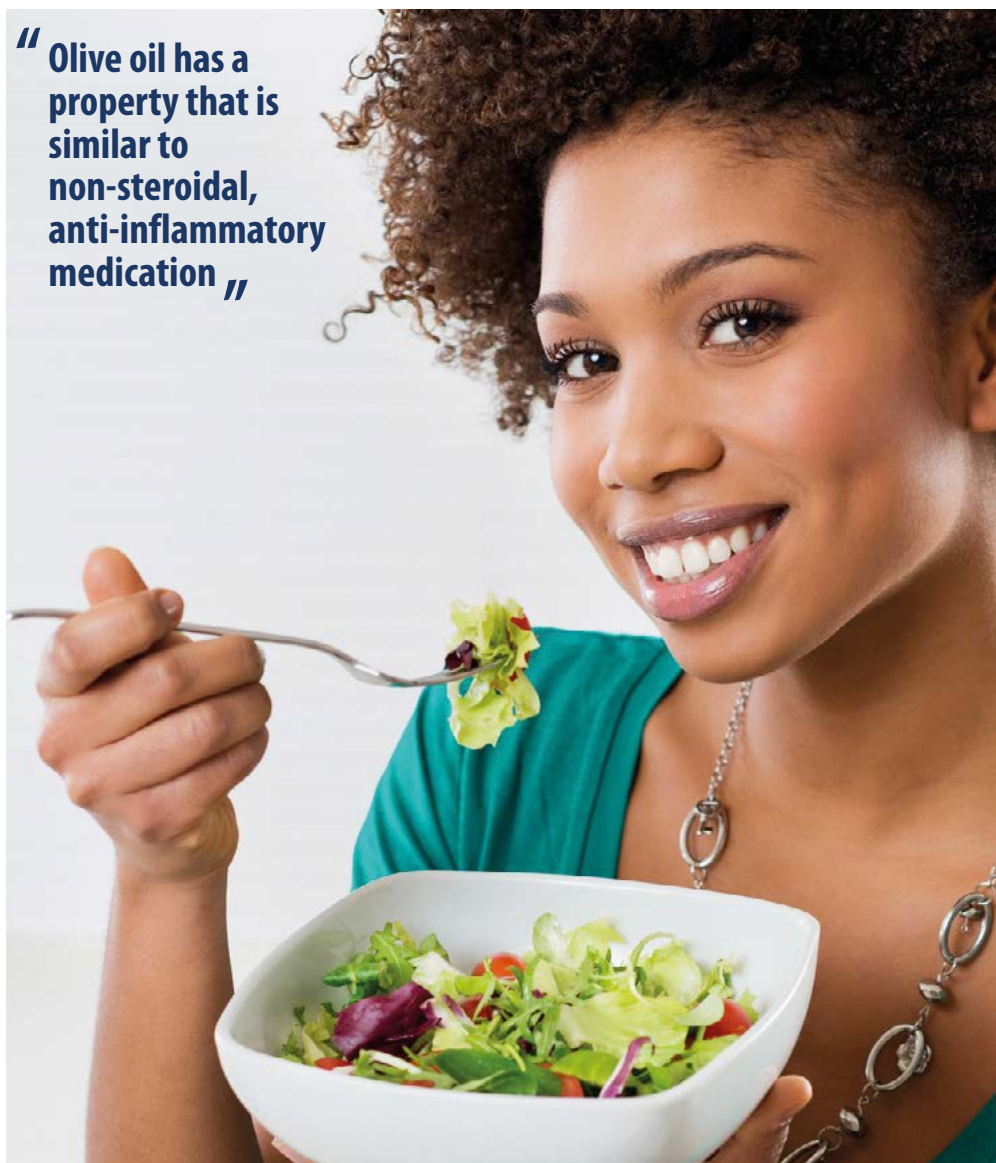
For centuries, olive oil has been known to have many health benefits. Like omega-3, extra virgin olive oil has shown great results in fighting inflammation. Olive oil has a property that is similar to non-steroidal, anti-inflammatory medication. This means the patient could in theory relieve their symptoms using less medication, also reducing side effects caused by the medication. Patients should always follow a clinician's advice regarding their medication rather than self medicating.

Fruit and vegetables are a must in our diet and are advised we include 5 of these foods as part of our daily diet. They are rich in antioxidants and other vital nutrients protecting the body against cell damage as well as reducing inflammation. Minerals such as vitamin C, A and K have shown to protect cells from free radicals and are high in bone preserving calcium.

Dairy is very important, foods such as cheese; milk and eggs are vital for patients who suffer from OA. Dairy foods are rich in vitamin D and calcium. They have many health benefits especially for patient's suffering from arthritis in that they increase bone strength, increase calcium absorption, reducing chances of developing OA and boost immune system. Decrease in dairy intake increase chances of bone damage/weakness.



**“ Olive oil has a
property that is
similar to
non-steroidal,
anti-inflammatory
medication ”**



EFFECTS OF NUTRITION ON ARTHRITIS AND MSK CONDITIONS

Just as eating a healthy diet can help support the body in many ways, it is known that consuming too much fat in a diet can cause many complications. There are different types of fats that can be harmful but others which can also be beneficial.

The four types of fats are:

SATURATED FATS

These can be very harmful and should be reduced as they increase inflammation as well as pain. These fats come from dairy products, chips, cakes etc. these fats increase low-density lipoproteins (LDL) resulting in high bad cholesterol levels.

POLYUNSATURATED FATS

These are found in omega 6 and omega 3 fatty acids. Omegas 3 are known for its anti-inflammatory benefits and its beneficial effects on the body. However, omega 6 can be very harmful and must be cut down as it can increase inflammation effects patients with MSK conditions. Omega 6 can be found in corn, sunflower and soy.

MONO UNSATURATED FATS

Although these fats don't affect inflammation, they are very high in calories. These fats may causes problems especially in people who are trying to lose weight. They can be found in olive and rapeseed oil.

TRANS FATS

These fats are the most harmful and can cause many health problems. They are made from oils that are chemically processed. They affect the body by increasing cholesterol levels, which increase problems with blood circulation and heart conditions. Due to the increase in LDL resulting in bad cholesterol, high-density lipoproteins (HDL) is reduced; this reduces the good cholesterol the body needs.



OBESITY

An unhealthy diet over time can lead to obesity. Obesity is linked to many illnesses and diseases, including MSK conditions.

Obesity can increase the chances of joint pain due to the increase in pressure on the knees and hips as a result of high body fat. The extra weight on the joints causes pain and may also cause stiffness resulting in restricted movement. Obesity increases the risk of developing Osteoarthritis.

Despite Rheumatoid Arthritis being an auto-immune disorder, research has shown that overweight patients are more likely to develop the condition. The reason behind this is that fat cells (adipose) release inflammatory chemicals causing irritation to joints and affecting the immune system.

Patients suffering from arthritis should take care of their weight and maintain a normal body mass index (BMI).

BMI CHART

WEIGHT		lbs																														
HEIGHT		kgs																														
ft/in		cm																														
		100	105	110	115	120	125	130	135	140	145	150	155	160	165	170	175	180	185	190	195	200	205	210	215	220	225	230	235	240	245	250
		45.4	47.6	49.9	52.2	54.4	56.7	59.0	61.2	63.5	65.8	68.0	70.3	72.6	74.8	77.1	79.4	81.6	83.9	86.2	88.5	90.7	93.0	95.3	97.5	99.7	102	104.3	106.5	108.8	111	113.4
5'0"	152.4	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49
5'1"	154.9	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	36	37	38	39	41	42	43	43	44	45	46	47
5'2"	157.5	18	19	20	21	22	22	23	24	25	26	27	28	29	30	31	32	33	33	34	35	36	37	38	39	40	41	42	43	44	45	46
5'3"	160.0	17	18	19	20	21	22	23	24	24	25	26	27	28	29	30	31	32	32	33	34	35	36	37	38	39	40	41	42	43	43	44
5'4"	162.6	17	18	19	19	20	21	22	23	24	24	25	26	27	28	29	30	31	31	32	33	34	35	36	37	38	39	39	40	41	42	43
5'5"	165.1	16	17	18	19	20	20	21	22	23	24	25	25	26	27	28	29	30	30	31	32	33	34	35	36	37	37	38	39	40	41	42
5'6"	167.6	16	17	17	18	19	20	21	21	22	23	24	25	25	26	27	28	29	29	30	31	32	33	34	35	36	36	37	38	39	40	40
5'7"	170.2	15	16	17	18	18	19	20	21	22	22	23	24	25	25	26	27	28	29	29	30	31	32	33	34	34	35	36	37	38	38	39
5'8"	172.7	15	16	16	17	18	19	19	20	21	22	22	23	24	25	25	26	27	28	28	29	30	31	32	33	33	34	35	36	36	37	38
5'9"	175.3	14	15	16	17	17	18	19	20	20	21	22	22	23	24	25	25	26	27	28	28	29	30	31	32	32	33	34	35	35	36	37
5'10"	177.8	14	15	15	16	17	18	18	19	20	20	21	22	23	23	24	25	25	26	27	28	28	29	30	31	32	32	33	34	34	35	36
5'11"	180.3	14	14	15	16	16	17	18	18	19	20	21	21	22	23	23	24	25	25	26	27	28	28	29	30	31	31	32	33	33	34	35
6'0"	182.9	13	14	14	15	16	17	17	18	19	19	20	21	21	22	23	23	24	25	25	26	27	27	28	29	30	31	31	32	33	33	34
6'1"	185.4	13	13	14	15	15	16	17	17	18	19	19	20	21	21	22	23	23	24	25	25	26	27	27	28	29	30	30	31	32	32	33
6'2"	188.0	12	13	14	14	15	16	16	17	18	18	19	19	20	21	21	22	23	23	24	25	25	26	27	28	28	29	30	30	31	31	32
6'3"	190.5	12	13	13	14	15	15	16	16	17	18	18	19	20	20	21	21	22	23	23	24	25	25	26	27	27	28	29	29	30	31	31
6'4"	193.0	12	12	13	14	14	15	15	16	17	17	18	18	19	20	20	21	22	22	23	23	24	25	25	26	27	27	28	29	29	30	30
		UNDERWEIGHT	IDEAL		OVERWEIGHT		OBESE		EXTREMELY OBESE																							

UNDERWEIGHT
IDEAL
OVERWEIGHT
OBESE
EXTREMELY OBESE

DAILY EXERCISES

Strengthening

Strengthening exercises are important in building muscle strength to support the joints.

Fingers



1 Start with the palm of your hand on a tea towel on a table, fingers spread apart.



2 Pull your fingers together, press your hand into the table and bunch the towel between your fingers.

Wrists



Place one of your palms on a table, then place the other hand over this one at right angles across your knuckles. Push down with the upper hand and try to lift the fingers of the lower hand off the table. Relax and repeat with the hands swapped over.

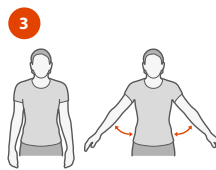
Arms



1 Stand with your arm straight, then bend your elbow and straighten it out again. Relax and repeat with the other arm.



2 Stand with a small weight in each hand. Raise your arms overhead to the side as far as you can and then lower them together slowly.



3 Stand with a small weight in each hand with your arms by your side. Slowly raise each arm from your body to the side. Hold for 5 seconds and slowly lower your arms.

If you do not have weights, you can use cans of beans instead.

Stretching

Stretching exercises are designed to make sure your joints are moved as far as they can be safely without pain. It is recommended that you repeat each exercise five times and hold the position for 5-10 seconds. These exercises should be done twice daily.

Fingers



1 Make a fist, then straighten your fingers.



2 Bend the first two joints of your fingers down, then straighten again.

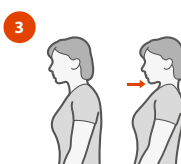
Neck



1 Sit with a straight back, slowly turn your head to one side and then the other.

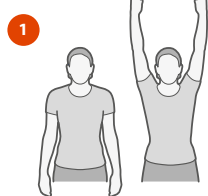


2 Sit with a straight back, lower your chin to your chest, then return to the starting position.

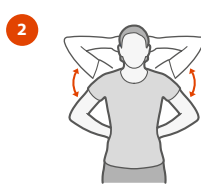


3 Sit or stand with a straight back, keeping your head level. Pull your chin back into your spine. Relax and repeat.

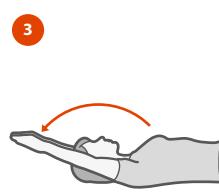
Shoulders



1 Stand with your arms relaxed at your sides, then raise your arms as high as you can.



2 Place your hands behind your head, then lower them behind your back.



3 Lie on your back and raise your arms in an arc over your head as far as you can comfortably.

Back



1 Lie on your back with your hands behind your head. Bend your knees and, keeping your feet on the floor, roll your knees to one side slowly.

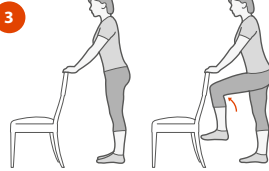
Knees



Sit on the edge of a chair or bed, raise your legs and cross your ankles over. Push your front leg backwards and your back leg forwards until your thigh muscles become tense. Hold this position for 10 seconds, relax, then switch legs and repeat.



Standing at the foot of the stairs, lift one foot onto the first step, keeping a straight back. Raise your second foot onto the step, then step down with the first foot, followed by the second foot. Alternate your starting foot and repeat. Hold onto the bannister if necessary.



Holding onto the back of a chair or work surface, lift one knee up towards your chest as far as you can. Lower it again slowly, then repeat with the other leg. Do this as many times as you can until you get tired or short of breath.

Stop if you start to feel dizzy doing any of these exercises. If it continues, please seek medical advice before doing any further exercises.



Sit on the edge of a chair or bed. Keeping a straight back with your feet on the floor, straighten one leg at the knee and hold that position briefly, then slowly lower your leg. Relax and repeat with the other leg. As you improve, you could use ankle weights to build even more muscle.

Feet

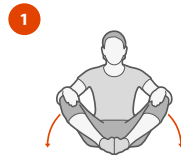


Bend your ankle up towards your body as far as possible, then point your toes away from your body.

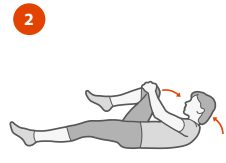


Move your ankle around slowly in a large circle. Relax and repeat in the opposite direction.

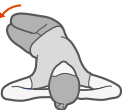
Hips



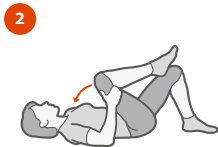
Sit with your knees bent and the soles of your feet together. Press your knees down towards the floor, using your hands if you need to.



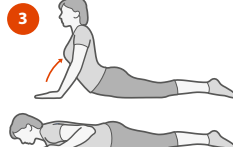
Lie on your back and pull each knee towards your chest, keeping the other leg straight. Relax and repeat with the other leg.



Hold the position for 10 seconds. Repeat this three times for each side. You can leave your arms at your side if it is uncomfortable.



Lie on your back with your knees bent. Bring one knee up and pull it gently towards the chest. Push your back flat against the floor. Hold the position briefly, then swap legs.



Lie on your front with your hands underneath your shoulders. Then straighten your arms to push your torso upwards, arching your back and pushing your hips to the floor.



In a standing position, place your hands on your hips and bend slowly to one side until you feel it stretch. Hold the position briefly, then repeat on the other side.

HEALTH MONITORING

It is very important that patients with arthritis and other musculoskeletal (MSK) conditions monitor their health regularly. This can be done through monitoring your diet and food intake. Keeping a food diary can help you spot patterns in your diet relating to flare ups and bad periods. It is advised that arthritis patients stick as close as possible to a healthy nutritional diet and to maintain a normal weight to prevent putting too much pressure on your joints.

BMI

BMI is a good indicator of how healthy your body is in general. A person's body mass index (BMI) is calculated according to their height and weight; the more overweight you are, the higher your BMI will be.

BMI RANGE	CATEGORY
below 15.99	severely underweight
16.00 - 16.99	moderately underweight
17.00 - 18.49	mildly underweight
18.50 - 24.99	normal weight
25.00 - 29.99	overweight
30.00 - 34.99	class 1 obesity
35.00 - 39.99	class 2 obesity
40.00 plus	class 3 obesity

M8 MACHINES

With advanced technology, a machine called M8 can be very helpful for patients in terms of self-monitoring. This machine can be found in most supermarkets and some pharmacies enabling you to work out your BMI and blood pressure. CLASH 2012 has one of these machines at Dock in Room 218, which is available for patients and members to promote a healthy lifestyle and encourage self management by monitoring their health.

The Benefits of M8:

- **Easy to use**
- **Easy to understand**
- **Handy printouts**
- **Variety of locations**



BLOOD PRESSURE

It is also recommended to monitor your blood pressure as a high blood pressure can lead to many health complications. An ideal blood pressure is 120/80 mm Hg, however, this value depends on your age. Persistent high blood pressure leads to hypertension, which has been shown to have many links to a variety of disorders and is closely linked to heart attacks. Elevated blood pressure is caused due to high salt intake, lack of exercise, obesity, alcohol consumption and many others.

High blood pressure may also be genetic and inherited through generations. Drugs such as non-steroidal anti-inflammatory drugs cause sodium and water retention in the kidneys resulting in high blood pressure.

EXERCISE

Healthy eating alone is not the key, exercise is an important part of a healthy lifestyle. Patients suffering from arthritis are advised to exercise, not only to maintain or lose weight but also to strengthen the joints and muscles. Exercise can also reduce stiffness, increase flexibility and ease pain. Exercising can also relieve pain in affected joints. For example, squeezing a stress ball can be helpful for patients who have pain and swelling in the joints of the hand.

“ You don’t have to run a marathon, even a little light exercise is better than none at all. ”



HOME REMEDIES

Home remedies are believed to be a natural and effective way to relieve the symptoms of arthritis. The ingredients are readily available and easy to mix, making these remedies a much more cost effective alternative to expensive artificial supplements. These remedies must be taken regularly and will take some time to build up in your system. Some of the best known remedies are:

HONEY AND CINNAMON

CASTOR OIL

APPLE CIDER VINEGAR

EPSOM SALT

TURMERIC

ICE THERAPY

OLIVE OIL

HOT WATER

POTATO

CHERRIES

GARLIC

PINEAPPLE

This turmeric, ginger and honey drink is one of the best known remedies you can do at home:

You will need...

- 2 cups of water
- ½ teaspoon ground ginger
- ½ teaspoon ground Turmeric
- Honey to taste

Directions...

Bring 2 cups of water to a boil, and add ½ teaspoon each of ground ginger and ground turmeric. Reduce to a simmer and let it sit for 10-15 minutes. Strain, add honey to taste, and enjoy twice daily.



FURTHER INFORMATION

**For more information about Arthritis and nutrition,
the following websites may be useful:**

<http://www.nhs.uk/Pages/HomePage.aspx>

<http://www.arthritisresearchuk.org/arthritis-information/conditions.aspx>

<http://www.arthritis.org/living-with-arthritis/arthritis-diet/>

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