



CESSH
CENTRE OF EXCELLENCE
SCIENCE SEAFOOD HEALTH

Seafood and
your health

ARTHRITIS

Contents

Seafood and your health	2
How can seafood help with arthritis?	3
How much seafood do I need to stay healthy?	3
Omega-3s	4
How much omega-3?	4
Which fish to choose?	5

Food guide

Meal planners	6—7
Recipes	8—10
Fortnightly shopping list	11
For more information	12



Seafood and your health

Evidence shows that eating a balanced diet high in seafood will reduce your risk of some chronic conditions, or help you manage your symptoms.

This booklet will help guide your food choices and includes a 14 day meal plan specifically designed for people at high risk of developing arthritis or for those who have rheumatoid arthritis.

How can seafood help with arthritis?

A healthy diet high in seafood can help reduce symptoms of rheumatoid arthritis and help you to manage your condition. These benefits include: reduced joint tenderness, a reduction in morning stiffness and reduced use of analgesic anti-inflammatory drugs. Rheumatoid arthritis may also increase your risk of heart disease. Research has shown that a diet high in seafood such as oily fish can help reduce the risk of heart disease.

Selecting seafood is also a smart choice for lowering cholesterol. In addition to omega-3, seafood contains many other nutrients beneficial to health, including: selenium; iodine; zinc; calcium and vitamin D.

It's also low in saturated fat, high in protein, and a good source of energy.

Iron	Iron is important for maintaining energy levels and a strong immune system. Mussels, oysters and tinned sardines are good sources of iron.
Iodine	Iodine is important for growth and seafood is the best natural source of iodine. Oysters, mussels and scallops are good sources of iodine.
Folate	Folate aids the prevention of neural tube defects in growing babies. Oysters and mussels are sources of folate.
Vitamin B12	Vitamin B12 helps the brain to work normally. Sardines, mussels and tuna are good sources of Vitamin B12.
Vitamin D	Vitamin D is good for the immune system and strong bones and muscles. Australian salmon, Atlantic salmon and tuna are good sources of Vitamin D.
Vitamins A & E	Vitamins A & E are powerful antioxidants which help the immune system and eye health. Mussels are the richest seafood source of vitamin A. Atlantic salmon and sardines are good sources of vitamin E.
Calcium	Calcium is important for maintaining healthy teeth and bones. Australian salmon and sardines are rich sources of calcium.

How much seafood do I need to stay healthy?

Evidence suggests that women should aim to consume 500mg of omega-3s per day.

Some types of seafood contain higher levels of Omega-3s than others. So the number of serves of seafood you need to eat each week to maintain good health depends on the type of seafood you eat. Generally, one serve of seafood is around 150g.



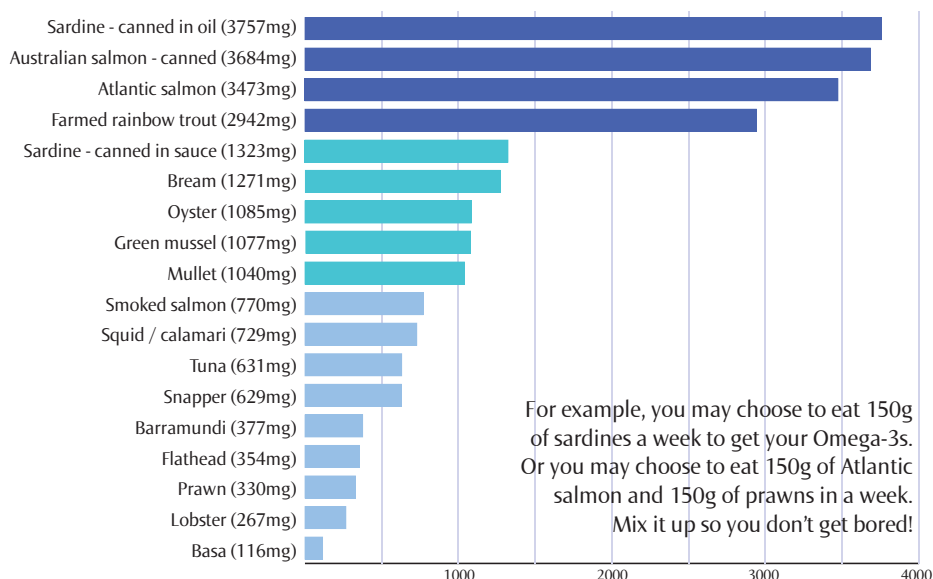


Omega-3s

Omega-3 fatty acids (Omega-3s) are essential to our health. Our bodies cannot produce these fatty acids and so we need to eat foods that contain them. The best source of omega-3s is seafood. In fact, the regular intake of Omega-3s as part of a healthy diet provides health benefit for conditions such as diabetes, heart disease, arthritis and some cancers.












How much omega-3?

Adults should aim to include 3500 - 4000mg of omega-3 in their diet each week. This table shows you how much Omega-3 is in a 150g serve of a variety of fish and seafood:



Which fish to choose?

Examples of seafood that are high, medium or low in Omega-3s

A	B	C
High omega-3	Medium omega-3	Low omega-3
 Atlantic salmon	 Bream	 Baramundi
 Trout	 Mussels	 Snapper
 Sardines	 Oysters	 Smoked salmon
 Canned salmon	 Mullet	 Canned tuna



14-day menu planner

Menu Suggestion: Week One

(Choose one item for each meal)

Breakfast

Cereal & reduced fat milk
Poached eggs on toast
Egg white omelette with smoked salmon

Lunch

Tuna bean salad
Canned salmon salad
Tuna Caesar wraps
Smoked salmon wraps
Tuna and green bean sushi rolls

Dinner

Grilled salmon with potato & green bean salad
Salmon, leek & potato soup
Steamed trout with spring vegetables & salsa verde
Baked bream with spinach pasta & green salad

Dessert

Fruit (2 pieces)
Low fat yoghurt (200ml tub)
Small bowl of low fat ice-cream
A handful of nuts

14-day menu planner

Menu Suggestion: Week Two

(Choose one item for each meal)

Breakfast

Cereal & reduced fat milk
Sardines on toast
Boiled eggs & tomato slices on toast

Lunch

Tuna & salad roll
Potato salad
Coleslaw and bean salad
Caesar salad (no dressing)
Smoked salmon sushi rolls

Dinner

Salmon pasta with fresh garden salad
Grilled mullet with BBQ vegies
Steamed bream with honeyed vegetables
Garlic prawn skewers

Dessert

Fruit (2 pieces)
Small bowl of low fat custard
Low fat yoghurt (200ml tub)
A handful of nuts

Recipes

Salmon, leek and potato soup (Serves 4)



Ingredients:

- | | |
|--------------------------------|------------------------------|
| 150g smoked salmon, chopped | 1 cup low fat milk |
| 2 large potatoes, chopped | 1 tbsp canola oil |
| 2 medium leeks, sliced finely | 1 tbsp fresh chives, chopped |
| 2 spring onions, sliced finely | salt and pepper |
| 3 cups chicken stock | bread to serve |

Method:

1. Heat oil in a large pan. Add leeks and cook over medium heat for 5 minutes or until soft. Add the potatoes and stock. Simmer for 20 minutes, or until the potatoes are tender. Stir in the milk and season with salt and pepper.
2. Allow the soup to cool slightly, then puree until smooth. Return the soup to the pan and stir through half the salmon, the spring onions and chives.
3. Toast the bread until golden and top with the remaining salmon. Cut the toast into fingers and serve with the soup.

Grilled mullet with BBQ vegies (Serves 2)

Ingredients:

- | | |
|--------------------------------------|---|
| 2 mullet fillets (120g each) | 1 baby zucchini, halved lengthways |
| 1 tbsp olive oil | 1 red capsicum, seeded and cut into two |
| juice of ½ lemon | 1 yellow squash, halved |
| 1 large red onion, cut into 4 wedges | 1 firm ripe tomato, halved |
| 2 flat mushrooms, sliced thick | olive or canola oil spray |
| 1 baby eggplant, halved lengthways | |

Method:

1. Combine oil and juice in a small bowl. Brush vegetables with the mixture. Heat barbecue and lightly spray with oil.
2. Barbecue vegetables until tender (about 10 minutes depending on thickness), turning after 5 minutes.
3. Once the vegetables have been turned, grill the mullet fillets on the barbecue for about 2 minutes each side or until cooked through (thicker fish pieces may need a little extra time).



Recipes

BBQ garlic prawn skewers (Serves 2)

Ingredients:

- | | |
|------------------------|---------------------------|
| 12 prawns | 4 small mushrooms, sliced |
| 1 garlic clove, minced | 8 cherry tomatoes |
| 1 tbsp olive oil | ¼ red capsicum |
| ¼ zucchini, sliced | |

Method:

Pre-heat the BBQ. Soak prawns in garlic and olive oil while you chop vegetables. Thread prawns and vegetables onto skewers, and BBQ until prawns turn pink.



Tuna and bean salad (Serves 2)

Ingredients:

- | | |
|------------------------------|-----------------------|
| 1 small tin tuna | 1 red capsicum, diced |
| 1 small tin 4 bean mix | 1 red onion, diced |
| 5 cherry tomatoes, quartered | low fat mayonnaise |

Method:

Drain tuna and beans. Combine in a bowl and mix through diced vegetables. Add low-fat mayonnaise to taste.

Smoked salmon wraps (Serves 2 – 4)

Ingredients:

- | | |
|---------------------------------|-----------------------------|
| 100g smoked salmon | 1 tbsp capers, chopped |
| 2 hard boiled eggs | 1 tsp fresh chives, chopped |
| 2 slices wholemeal lavash bread | 25g baby English spinach |
| 2 tbsp low fat mayonnaise | |

Method:

1. Peel and mash the eggs. Add the mayonnaise, capers and chives and mix to combine.
2. Lay the lavash on a flat surface. Spread the egg mixture over the centre of the lavash and top with the spinach and smoked salmon.
3. Roll up to enclose the filling. Cut into thick slices to serve.



Recipes

Steamed rainbow trout with spring vegetables & salsa verde (Serves 2)

Ingredients:

4 x 120g pieces of trout
salt and pepper
Sprigs of fresh dill
1 cup fresh basil leaves
sprigs of fresh rosemary
4 baby carrots
2 whole florets broccolini
2 small spring onions, trimmed
4 small new potatoes
2 baby zucchinis
handful of snow peas or green beans

Salsa Verde*:

1 cup chopped fresh parsley (or use a mix of parsley & basil)
1 clove of garlic
2-3 anchovies in oil, drained
1 tbsp drained capers
1 tbsp white wine vinegar or freshly squeezed lemon juice
3-4 tbsp extra virgin olive oil

*Place everything in a mortar or food processor and process to a chunky paste

Method:

1. Place fish pieces in the centre of oiled cling wrap. Sprinkle with salt and pepper and place dill sprig on top. Roll up, pierce all over with the point of a sharp knife, and set aside.
2. Place the basil leaves and rosemary sprigs in the bottom of a steamer and add about 4cm of water. Bring to the boil. Then arrange the vegetables in the steamer. Cover and steam for about 6 minutes.
3. Make the salsa verde.
4. Push the vegetables aside and nestle the wrapped fish amongst them, then steam a further 6 minutes, or until the fish and vegetables are tender.
5. Unwrap the fish, serve surrounded by the steamed vegetables, and drizzle with salsa verde.



Fortnightly shopping list

Grocery

Cereal (rolled oats, bran flakes or Weetbix)

Eggs

Tuna & salmon (cans)

Sardines (can)

Three bean mix (can)

Pasta (linguine & spinach)

Rice (sushi)

Mixed nuts

Extra virgin olive oil /Canola oil

Mayonnaise, low fat

Vinegar

Light soy sauce

Nori sheets

Wasabi paste

Dried apricots

Dairy

Milk, reduced fat

Cheese & cottage cheese, reduced fat

Yoghurt, low fat

Custard, low fat

Crème fraîche

Seafood

Salmon

Bream

Trout

Mullet

Prawns

Smoked salmon

Fruit and vegetables

Apples, pears

Oranges, mandarins

Bananas

Lemons

Tomatoes/cherry tomatoes

Carrots

Pumpkin, squash

Mushrooms

Baby spinach

Avocado

Cucumber

Salad leaves/rocket

Caesar salad mix/Cos lettuce

Fresh herbs-parsley, chives, dill

Garlic & ginger

Red onions/spring onions

Potatoes, leeks

Eggplant

Broccoli/broccolini

Capsicums, zucchini

Asparagus spears

Freezer

Peas, corn

Green beans

Ice-cream, low fat

Bakery

Bread (multigrain & rye)

Lavash bread, wraps

Bread rolls

Rye crisp bread & crackers



For more information on seafood and health
please visit **www.cessh.curtin.edu.au**

For more information on arthritis visit:

Arthritis Australia
www.arthritisaustralia.com.au

Arthritis Foundation WA
www.arthritiswa.org.au