Rural Spinal Cord Injury Project
A collaborative project between:
Prince Henry & Prince of Wales Hospital
Royal North Shore Hospital
Royal Rehabilitation Centre Sydney
Australian Quadriplegic Association
Paraplegic & Quadriplegic Association of NSW

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NUTRITION

for adults with Spinal Cord Injuries

Targeting people with Spinal Cord Injuries and significant others

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MOTOR ACCIDENTS AUTHORITY

Issues that may impact on a persons nutritional status

Maintaining a healthy body weight

After a Spinal Cord Injury (SCI), quadriplegia in particular, the energy requirements of the body decline and the metabolism becomes sluggish due to insulin resistance. It is very easy to gain weight if eating habits do not change. Being overweight and having a SCI impacts on many important factors such as, skin integrity, equipment (eg. wheelchair, hoist), bladder & bowel management, mobility, transferring, dressing and independence. People with SCI have a greater tendency to heart disease and diabetes. Being overweight and drinking excessive amounts of alcohol increases the risks further.

Alternatively, being to thin is also a cause for concern. It is worthy to note that people without a disability, who are significantly underweight, have shown to be at a greater health risk than those slightly over weight. Combine a severe physical disablitiy with being significantly underweight due to prolonged malnutrition and you will have fragile health. A particular concern for people with SCI, who are significantly underweight, is the increased risk of decubitus ulcers (pressure sores).

Ultimately, if you are able to maintain a healthy body weight, you minimise your disablilty and keep healthy.

NB: The assessment of acceptable weight for height using the Body Mass Index (BMI- weight/height^2) is an inappropriate indicator for people with a SCI because of significant muscular atrophy due to paralysis.

Managing bowel function

For most people with a SCI it is necessary that they use some form of medication when it comes to managing their bowels. Outside of these medications, nutrition is the single most important factor to keeping a bowel routine regular. People who only look towards increasing their medications when their bowel routine is irregular, get caught in a vicious circle of having to further increase their medications in the future. On the other hand, people who eat a healthy diet and try to address problems in their bowel routine through diet are better able to keep their medications to a minimum and manage their routine more successfully over time.

Dietary fibre is the component in a healthy diet that, among many other benefits, promotes bowel regularity. Constipation is a direct result of a diet which is low in dietary fibre. Dietary fibre creates faecal bulk. Having faecal bulk allows for strong muscular contractions of the bowel called peristalsis. Over time a diet high in fibre results in a toned bowel. Hence, to achieve regularity and thorough evacuation of the lower bowel, a healthy diet must be maintained over time. Additionally, sufficient fluid intake must be consumed, otherwise

faeces become hard, dry and difficult to pass, as occurs with constipation. The Food Pyramid on page 6, shows the foods that contain dietary fibre in the food groups listed as 4 and 5 and the recommended intake of fluid is outlined in food group 6.

Managing bladder function

Good bladder management is about practising hygiene and keeping yourself free of infections. It is also about healthy nutrition! What do you drink? How much do you drink? And when do you drink it? These three factors have very signicant effects on how you can better manage your bladder as well as your general well-being. (Refer to the Nutritional Guidelines and the Food Pyramid on page 6 & 7 respectfully).

Maintaining skin integrity

A healthy diet promotes good health. A benefit of good health is having healthy skin. Skin that can handle constant pressure, resist infection and take the odd knock is most desirable to a person with a SCI.

Access to purchasing food

There may be several barriers a person with a SCI may need to negotiate before they consider purchasing food. For example, access and cost of accessible transport, access into shops, availability of a carer or assistance, weather conditions and the cost of food in relationship to a low income. These are common barriers experienced by a person with a SCI.

Many people with a SCI dread the thought of going shopping. The anxiety of having to go shopping becomes a barrier within itself. Going shopping puts you and your disability out there for the public to stare at. Other problems can be dealing with crowds and shopping trolleys, not being able to reach shelves and juggling your way through the checkouts. For some people with SCI shopping is stressful and they will tend to delay the event for as long as possible. The nutritional status of a person maybe poor, because perishibles such as fruit and vegetables are not purchased on a regular basis.

Not all people with a SCI shop independently. Leaving a temperature-controlled environment of home to go shopping is often seen as unpractical, uncomfortable, costly, and as mentioned above, stressful. In turn, not having the experience of looking at new foods and the chance to experiment with a variety of products, it is easy to become limited in what you buy. Taking all these factors of "purchasing food" into account, it is not difficult to see why people with a SCI make poor or limited food choices.

Access to food preparation

Having a physical disability and cooking for yourself can be difficult, time consuming, hazardous and, for many, impossible. The obvious solution, is for people to access assistance with meal preparation. However, there are a few common problems to consider:

SERVICE LIMITATIONS

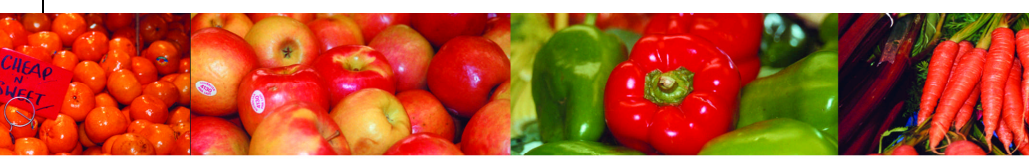
- Service providers generally allocate 1 hour for meal preparation. This means that meals have to be fairly easy to prepare and require minimum cooking or simmering.

FLEXIBILTIY AND SERVICE PROVISION

- Service providers schedule meal preparation for a set time everyday. This may not be ideal for the individual as there is no opportunity for flexibilty.

QUALITY OF SERVICE PROVISION

- Field staff are not required to show any competencies in food preparation. This may mean their cooking skills are basic and very limited. This then means a person does not have the opportunity to eat a variety of foods.



Psychosocial Factors

SCI is a very significant and obvious physical disability. As a result, there is a large therapeutic focus on dealing with this physical "dysfunctional". What isn't always obvious is how a person is emotionally or whether they are managing to interact with other people.

It is often perceived that after a person has sustained a SCI they go through a period of depression, and in a defining moment, they're over it. In reality it's more about coping with a disability day in, day out. Some days you're on top of things and then there are some days where your disability is more noticeable than usual and it can get you down. For some, these feelings can become at times overwhelming and impact on what that person eats directly and indirectly.

Finding solutions to psychosocial issues is never easy or one dimensional. Therefore, a number of strategies may need to be implemented to address these problems. It is beneficial if a person seeks support when they are depressed or anxious. Likewise, talking to other people who have similar disabilities could be useful, as is seeking appropriate support from service providers, e.g. Homecare.

Nine Dietary Guidelines

Adapted from Australian Dietary Guidelines National Health and Medical Research Council (NHMRC), 1992- and currently under review.

1. Enjoy a wide variety of nutritious foods

People with SCI are at a high risk of health complications, such as urinary tract infections and pressure sores. If a person with a SCI is not mindful of reducing the risk of disease through methods such as infection control and pressure management, poor health is likely to follow. Eating a wide variety of nutritious foods are also fundamental to reducing the risk of disease. Nutritional food allows the body to function optimally, boosts the immune system when needed and assists with recovery.

2. Maintain a healthy body weight by balancing physical activity and food intake.

As mentioned previously, a person with a SCI who is able to maintain a healthy body weight, is in effect, minimising their disability. Being over or underweight complicates many important factors such as skin integrity, equipment needs, bladder & bowel management and independence with activities of daily living. In attempting to maintain a healthy body weight it is essential to grasp the concept that adjustments need to be made to a person's energy intake to allow for the reduced levels of activity resulting from their paralysis. Ideally, a diet for a person with a SCI is nutrient dense but low in energy.

3. Eat plenty of fruit and vegetables

It is recommended that Australians eat two serves of fruit and five serves of vegetables per day. Fruit and vegetables are high in nutrients such as minerals, vitamins, fibre and complex carbohydrates, though, low in fat. Likewise, fruit and vegetables are ideal for meeting the nutritional needs of people with a SCI (Refer to guidelines no's.4 & 5). Therefore, the recommended daily intake for people with SCI, taking into account weight managment, is four serves of fruit and six serves of vegetables per day.

4. Eat plenty of grains, cereals and legumes (preferably wholegrain)

Grains, cereals and legumes are excellent sources of complex carbohydrates. Such food has the ability to give sustained energy without the risk of gaining weight. Additionally, these foods are high in important nutrients such as minerals, vitamins and fibre (particularly wholegrain foods). Fibre in the diet gives bulk to the faeces moving through the bowel. Without fibre, the bowel may become sluggish and not empty as thoroughly.

5. Eat a diet low in fat and, in particular, low in saturated fat

Fat in the diet provides fat-soluble vitamins, fatty acids and energy. All of these are essential to the healthy nutrition of people with a SCI. However, reducing the amount of excessive fat is the key factor. The flow on effect of reducing fatty foods from the diet is that other healthier foods then have to be eaten to satisfy hunger, such as fruit, vegetables, grains and cereals.

6. Drink adequate amounts of water throughout the whole day

Drinking adequate amounts of water prevents constipation and flushes the kidneys to reduce the risk of infection. The best indicator of adequate hydration is monitoring the colour of urine being discharged. It is desirable to have yellow urine throughout the entire day, not once allowing the colour to turn amber. Having amber coloured urine is demonstrating that dehydration has already occurred.

7. If you drink alcohol or caffeine, limit your intake

Alcohol and caffeine beverages (eg. cola, coffee) effect the body as a diuretic. A diuretic stimulates a hormonal response to excrete fluid from the body in the form of urine. Excessive amounts of alcohol and caffeine cause a large volume of needed water to be removed from the body. Ultimately, dehydration will occur even though the urine being passed at the time is clear (normally this would indicate the body to be well hydrated). Without drinking comparative amounts of water immediately after alcohol or caffeine, minimal urine output and constipation is likely to follow.

8. Eat at least three times a day

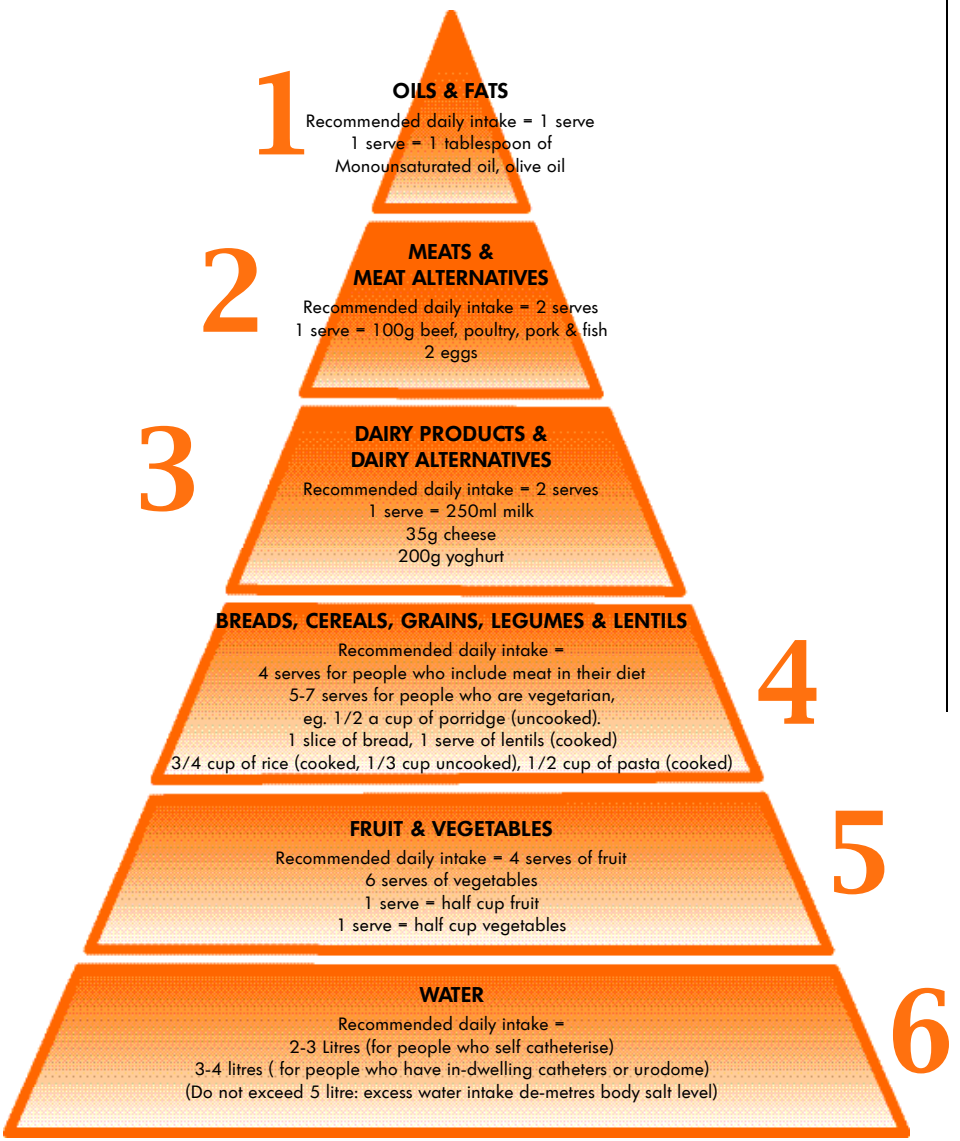
Skipping meals regularly causes the metabolism to slow down. This is undesirable to all people particularly those people with a SCI because it complicates weight management. Couple the reduced capacity for activity (due to paralysis) with a slow metabolism, through skipping meals then the risk of obesity becomes higher. Having a slow metabolism also reduces the body's ability to fight infection, making itself more susceptible to disease. Therefore, to maintain a healthy and balanced diet, it is essential to eat breakfast, lunch and dinner.

9. Eat only low amounts of sugar and foods containing added sugars

Sugar alone is not considered the biggest cause for obesity in the Australian diet. However, if you have a SCI and are significantly paralysed, it is likely that you are not burning many calories each day, reinforcing the need to have a diet which is nutrient dense but low in energy. Apart from making foods taste sweet and providing sixteen calories per gram, white refined sugar has no other nutritional value. Having a diet low in simple sugars incorporated into a healthy balanced diet may be the very difference that allows you to maintain your healthy weight.

Food Pyramid

Recommended serves per day for people with SCI



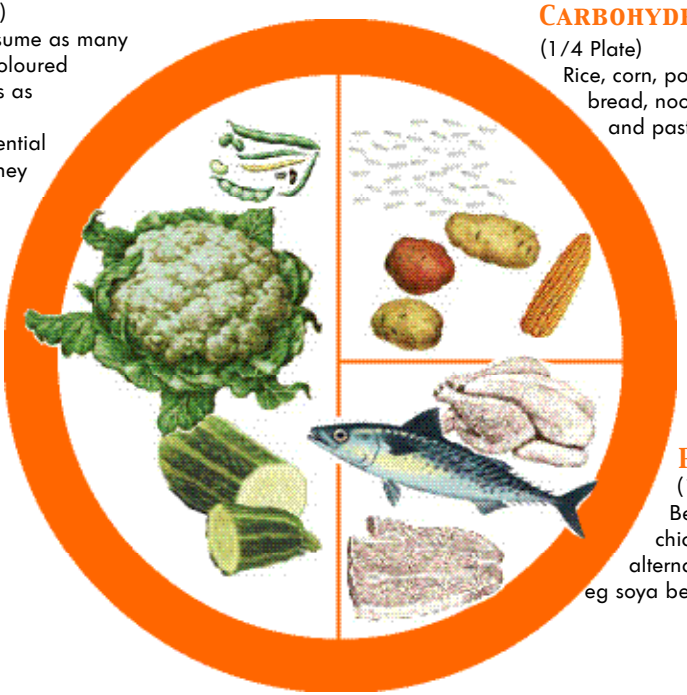
How to balance your plate

Vegetables

(1/2 Plate)
Try to consume as many different coloured vegetables as possible.
This is essential because they contain different vitamins.

Complex Carbohydrates

(1/4 Plate)
Rice, corn, potato, bread, noodles and pasta.



Protein

(1/4 Plate)
Beef, fish, chicken, meat alternatives eg soya bean curd

This photo demonstrates the recommended nutritional proportions:
1/4 plate protein,
1/4 plate carbohydrates
and 1/2 plate of vegetables

The recommended nutritional proportions are also achieved in this example. Here we have 1/4 plate Carbohydrates (pasta) 1/4 plate protein (mince meat) and 1/2 plate of vegetables (sauce and salad).

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READING

Australian Dietary Guidelines National Health and Medical Research Council (NHMRC), 1992- and currently under review.

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