

Nutrition for people with wounds

Why is it important?

Did you know that a lack in nutritional requirements impedes the normal progression of a wound through the stages of healing? You can give the best wound care possible and make little difference to an individual's healing rate if they are malnourished.

Without adequate nutrition an individual's wound healing may be delayed, the strength of their wound impaired, or the wound may even be prone to breaking down again. Infected wounds also increase the need for nutrient demand as they cause more tissue damage and strain.

What can I do?

Assessment

- Anyone with a complex or chronic wound should be referred to a dietitian
- All other individuals admitted to your service should have a nutritional risk screen completed and referred to a dietitian if indicated
- Involve the individual in the assessment. Do they believe there are concerns with their nutrition? What are these concerns?

Intervention

- Provide individuals with the 'Healthy eating for healing' brochure
- Liaise with the dietitian
- Provide support and encouragement to the individual to assist in implementing the dietitian's plan
- If a dietitian is not warranted, discuss the nutritional value of food and fluids with the individual, assist them to improve their intake and remove barriers to consumption



This may include:

- Adjusting the eating environment (well-lit, clear table space)
- Organising delivered meals
- Ensuring the individual has assistance with shopping
- Ensure dentures are well-fitted

Evaluation

- Liaise with the dietitian on the individual's progress and alert them of any issues or concerns
- Measure the success of wound outcomes (for example, wound size, exudate amount)
- Assist the dietitian with measuring the success of other indicators of adequate nutrition (for example, weight, skin turgor)

Which nutrients are needed?

For handy tips on how to meet these requirements, refer to the 'Healthy eating for healing' brochure.

Energy (kilojoules or calories)

The presence of wounds always increases an individual's energy requirements, regardless of body size. For example, a person with a grade 3–4 pressure ulcer requires about 35–40 kilocalorie per kg of body weight (with obesity adjustment).

- Collagen healing is the main reason for increased energy requirements
- Weight maintenance is important for overweight people with wounds. Remember that overweight people may still be malnourished and will require dietitian intervention and possibly supplementation
- Energy sources in the diet mainly come from fat and carbohydrates
- Fat is a concentrated source of energy. Main fat sources are margarine/ butter, oils, full-fat cheeses and other dairy products, meat and nuts
- Carbohydrate is another nutrient that provides energy. Consumption of adequate carbohydrate helps preserve protein for wound healing. Good sources of carbohydrate are fruits, cereals, grains, breads, starchy vegetables, legumes, rice and pasta
- In the case of serious wounds or poor appetite it is difficult to meet nutritional requirements without supplementation



Protein

An individual with a wound requires more protein than normal. For example, an individual with a grade 3–4 pressure ulcer requires about 1.5–2g of protein per kg of body weight per day. A 'well' adult's usual daily protein requirement is about 0.75g/kg body weight or for the 'well' elderly, approximately 1g/kg body weight per day.

- Protein is essential for maintenance and repair of body tissue
- Depleted protein levels will cause a decrease in collagen development. Collagen is a major part of granulation tissue and a basic building protein
- Loss of protein can occur via wound exudate. The exudate amount needs to be monitored carefully. If dressing changes are occurring frequently because of high exudate, protein supplementation needs to be considered
- Sources of protein include red and white meats, fish, eggs, liver, dairy, beans, legumes, seeds, nuts and grains
- Arginine is an amino acid found in foods such as nuts, seeds and meats. This is particularly important for wound healing. Enough of this amino acid can be difficult to obtain from diet alone. Arginine is available in liquid or powder supplements. The merit of introducing arginine into a person's diet should be discussed with a dietitian



Vitamin C

- Vitamin C is essential for strength in collagen development
- Vitamin C helps with the absorption of iron in food
- Wounds will heal in the Vitamin C deficient state but are prone to bursting due to the weakness in cross-linking of collagen
- Sources of Vitamin C are mainly fruit and vegetables (particularly citrus) berries, tomatoes and green vegetables
- An individual with a simple wound does not necessarily require extra Vitamin C above normal requirements. Smokers do require more Vitamin C than non-smokers. Individuals with complex wounds may require Vitamin C supplementation

Vitamin A

- Vitamin A stimulates collagen synthesis by increasing the inflammatory response in wounds
- Vitamin A supplementation is not required for wounds provided the Vitamin A status is normal
- Food sources of Vitamin A include full-fat dairy products, eggs, fish, dark green vegetables and citrus

Vitamin E

- Vitamin E is another anti-oxidant vitamin that may help wound healing by controlling the production of free radicals. There is no evidence that supplementation via the oral route is beneficial to wound healing
- Dietary sources of Vitamin E are nuts, seeds, oils

Minerals: Zinc and iron

- Zinc and iron are essential for collagen synthesis, tissue growth and carrying oxygen to the wound
- Zinc supplementation may be required for individuals with complex wounds who are zinc deficient, however excessive zinc can impair wound healing

- Dietary sources of iron are meat, chicken, fish, liver and wholegrain or wholemeal breads, cereals, rice, pasta, nuts, legumes, seeds and green vegetables

What else?

- Hydration is essential for skin elasticity and skin strength
- Encourage eight cups of fluid a day unless medically contraindicated. For example, cardiac or renal disease
- Sources include tea, coffee, water, juice, milk, jelly, soup, soft drinks, diet drinks, ice cream and yoghurt. Contrary to popular belief, tea and coffee can be useful for maintaining hydration. Habitual tea and coffee drinkers do not suffer dehydration from the caffeine in these drinks



Tips to remember

- 1 **Consider referral to a dietitian. A dietitian can be accessed via local Community Health Centres, your local hospital or DAA (Dietitians Association of Australia) website – www.daa.asn.au**
- 2 **Aim for weight maintenance during wound healing. Underweight individuals should gain weight to the normal range. Overweight individuals should stabilise their weight, NOT lose weight until healed**
- 3 **Ensure you use the same scales each time you weigh an individual**
- 4 **Take extra care when addressing the nutritional needs of an individual with diabetes. Monitor glycaemic control. Consider referral to a Diabetes educator**

References

Ellis, T., Fazio, V., Rice, J., Sussman, G., Woodward, M. (2009) *Nutrition & Wound Healing: Expert Guide for Healthcare Professionals*. Nestle Nutrition.

Australian Government: Department of Health and Ageing. (2005). *Food for health, dietary guidelines for Australians*. Commonwealth of Australia.

Nutrition Australia: *Promoting optimal health by encouraging food variety and physical activity*. <http://nutritionaustralia.org/national/resource/healthy-living-pyramid> (accessed November 2010)

Disclaimer

This health care guide is part of the 'Connected Wound Care' program, which provides important information about wound care. All care has been taken to ensure information is current and best-practice, however always consult your healthcare professional if you have any concerns or queries.

Acknowledgements

Connected Wound Care – an initiative of the Victorian Department of Health Strengthening Wound Management Practice Strategy developed in partnership with Royal District Nursing Service and the Victorian Regional Wound Management Clinical Nurse Consultants. This project received support from the Australian and Victorian Governments through the HACC program, www.health.vic.gov.au/hacc/projects/woundmanagement

Developed September 2011

Reviewed November 2012