# **General diets**



# Low microbial

This document is part of the ACI Diet Specifications for Adult inpatients. It is not to be used for patient education.

#### **Aim**

To provide a diet that limits foods that are at high risk of carrying food-borne disease.

#### Characteristics

Avoids food with a high bacterial or fungal load. Sterile diets are no longer used because there is no evidence to support their use.

# Where appropriate, clinicians may consider ordering this diet for patients:

- With neutropenia (neutrophil count ≤ 1000 cells/µL)
- Who are severely immunosuppressed (e.g. some patients post-transplant or those undergoing some cancer treatments)
- With poor gut integrity.

Other risk factors that may need to be considered are age, pregnancy and polypharmacy.

However, as food safety management has improved, the standard hospital diet may be considered safe for the vast majority of immunocompromised patients.

# **Nutritional adequacy**

Nutritionally adequate.

### **Precautions**

Patients ordered this diet must be supervised by a dietitian. As these patients are often malnourished, nutritional supplements may be required. All salads and sandwiches must be served within 24 hours of preparation and contain allowed ingredients. Bottled water must be replaced as needed (at least daily), not topped up or refilled.

Food safety practices must ensure that clean, dry utensils are always used so that bulk packs are not contaminated.

#### **Paediatrics**

Suitable for use in paediatrics when combined with an age-appropriate diet.

# Specific menu planning guidelines

	Allowed	Not allowed
Hot main dishes	All well-cooked meat, poultry, seafood and vegetarian dishes Serve eggs that are cooked until the white is firm and yolk begins to thicken	Undercooked meat, poultry or seafood Raw tofu, smoked fish, tempeh Raw or soft-boiled eggs
Sauces, gravies	All cooked	All others
Starchy vegetables / pasta / rice	All cooked	All others
Vegetables	All cooked and canned vegetables  Vegetables that can be sanitised whole#	All others including fresh fermented vegetables and pickles
Soups	All hot soups including pasteurised miso products without kelp/seaweed	Cold soups
Sandwiches	Sandwiches must be made on site, contain allowed ingredients and used within 24 hours Pasteurised meats and poultry (cooked in bag) and sliced acceptable with correct food hygiene practices# Hard boiled eggs, canned fish Commercially manufactured and packaged hard cheese (e.g. cheddar) Cottage cheese may be used if served on the day the package is opened Canned pâté and meat spreads	Unpasteurised proessed meats and poultry (e.g. some hams, chicken roll)  Smoked meat and fish  All other pâté and meat spreads (e.g. those requiring refrigeration)  Leafy green vegetables, e.g. lettuce, baby spinach, parsley, rocket
Salads, dressings	Vegetables and fruit that are canned or can be sanitised# as a whole uncut item e.g. tomato, cucumber, zucchini, capsicum, carrot, orange Salads must be made on site, contain allowed ingredients and used within 24 hours Canned salads (e.g. mixed beans, potato salad) Portion packs of commercially manufactured mayonnaise, dressings and condiments	Unwashed raw vegetables and sprouts, including mushrooms  Leafy green vegetables e.g. lettuce, baby spinach, parsley, rocket  Salad dressings made with blue cheese or raw eggs  Unpasteurised sliced processed meats and poultry (e.g. some hams, chicken roll)  Compound salads e.g. potato salad and coleslaw  Cooked and peeled prawns to be served cold
Breads, cereals	All breads, pre-packaged, processed and ready-to-eat including raisin or fruit bread Cooked breakfast cereals e.g. porridge, semolina  Plain commercially manufactured breakfast cereals without dried fruit, coconut or nuts (e.g. corn flakes, wheat biscuits, puffed rice)	Raw oats Raw muesli including bircher All other breads and cereals
Spreads	Large commercially manufactured brands of jam, nut butters and pastes, yeast spreads, marmalade, chocolate hazelnut spread, mayonnaise  Spreads in portion control packs or bulk containers which have been handled in a way to prevent contamination  Canned pâté and meat spreads  Pasteurised honey (including portion control packs) and honey as an ingredient in a cooked meal	Other spreads including tahini and hummus

Hot breakfast choices	All cooked breakfast items	All others
	Pure maple syrup	
	Pure golden syrup	
Fruit	Sanitised whole fresh fruit (e.g. apples, oranges, mandarins, pears, kiwi fruit, stone	Cut fruit
	fruit, grapes etc.)	Fresh fruit with a rough texture (e.g. raspberries, strawberries, rockmelon)
	Bananas served whole (unpeeled and uncut)	Uncooked dried fruit
	All canned or stewed fruit	
	Fruit from bulk packs must be used within 48hrs of decanting	
	Cooked dried fruit (e.g. muffins and cakes	
	containing dried fruit)	
Yoghurt	Commercially manufactured yoghurts,	All other yoghurts, including home made and
	including those with fruit  Yoghurt from bulk packs must be used within	probiotic yoghurts
	48 hours after decanting	
Desserts	Desserts and puddings served hot e.g sticky	Desserts containing uncooked eggs e.g. mousse
	date pudding, apple crumble	Pastries filled with cream or custard after cooking
	Heat-treated portion-control cold desserts e.g. custard, creamy rice	e.g profiterole  Ice cream with dried fruits, coconut and nuts
	Shelf-stable commercially manufactured cakes,	ice cream with dried fruits, cocondit and nuts
	pastries and puddings	
	Pastries with fillings cooked in e.g. apple danish	
	Other commercially manufactured ice creams using allowed ingredients	
Milk and cheese	All pasteurised milk and milk products including cream and sour cream	Surface-ripened cheese (e.g. brie, camembert, blue)
	Commercially manufactured and packaged hard cheese (e.g. cheddar) including cheese slices	Soft and semi soft cheese unless used as an ingredient in a cooked dish
	Cottage cheese may be used if served on the day the package is opened	
Beverages	Pasteurised fruit juices in sealed portions	Fresh and unpasteurised juices
	Cordial made with potable water and chilled	Herbal teas
	once prepared  Bottled or portion controlled water	Fermented drinks e.g. kombucha
	Drinks made with chocolate powder	Wine and beer as a beverage
	Tea, coffee, carbonated drinks, commercially	
	manufactured energy drinks	
Biscuits	All baked, shelf-stable portion packs of biscuits and crackers	All others
Miscellaneous	Nutritional supplements	Raw nuts and nuts in shells
	Salt	Raw oysters
	Cream	Herbs, spices and pepper
	Plain commercially manufactured popcorn  Sugar and artificial sweeteners	Raw coconut
	Chocolate with allowed ingredients	
	Confectionery with allowed ingredients	
	Potato crisps	
	Baked, shelf-stable muesli bars	

<sup>#</sup> As per NSW Food Authority vulnerable population requirements.

### References

- 1. Dietitians Association of Australia. Nutrition manual. 9th ed. Canberra: DAA; 2014.
- Centers for Disease Control and Prevention. Guidelines for prevention and treatment of opportunistic infections in HIV-infected adults and adolescents. MMWR 2009;58(RR-4):1-207. [accessed 27 July 2010]; Available at: http://www.cdc.gov/mmwr/pdf/rr/rr5804.pdf
- 3. NSW Food Authority. Guidelines for food service to vulnerable persons. Sydney: NSW Food Authority, 2015. [Accessed 2 June 2017] Available at <a href="http://foodauthority.nsw.gov.au/aboutus/science/risk-assessment-of-food-safety-schemes/vulnerable-persons-food-safety-scheme">http://foodauthority.nsw.gov.au/aboutus/science/risk-assessment-of-food-safety-schemes/vulnerable-persons-food-safety-scheme</a>
- 4. Memorial Sloan Kettering Cancer Centre. Low-Microbial Diet. New York; 2017. [Accessed 23 June 2017] Available from <a href="https://www.mskcc.org/experience/patient-support/nutrition-cancer/diet-plans-cancer/neutropenic-diet">https://www.mskcc.org/experience/patient-support/nutrition-cancer/diet-plans-cancer/neutropenic-diet</a>
- 5. UC San Diego Health. Low Microbial Diet Guidelines. California; 2016. [Accessed 23 June 2017].
- 6. Lund, B M. Microbiological food safety and a low-microbial diet to protect vulnerable people. Foodborne Pathogens and disease. 2014 June;11(6):413-24.
- 7. Lund, B.M Microbiological Food Safety for Vulnerable People. Int J Environ Res Public Health. 2015 Aug 21;12(8):10117-32.
- 8. Lund, B. Microbiological safety of food, particularly for vulnerable people. J Fam Med Dis Prev. 2016:2:035
- 9. Doron, S and Snydman, D. R. Risk and Safety of Probiotics. Clinical Infectious Diseases. 2015;60(S2):S129-34.

DATE: July 2017