



Nutrition issues in Human Immunodeficiency Virus (HIV)

Foreword: Nutrition plays a complex role in people's mental health. Trust, respect, and hearing each person's lived experience is crucial to being able to provide appropriate and safe nutrition counselling. It is important to uphold truly person-centred care alongside evidence-based practice, and to acknowledge that mental health is multifactorial and more complex than diet alone.

What is HIV?

HIV stands for Human Immunodeficiency Virus, a virus which targets the body's immune system and weakens people's defence against infections, certain cancers, and other diseases that those without HIV are usually be resistant to. As HIV destroys and impairs immune cells' functions, people with untreated HIV gradually become immunodeficient (1). There is currently no effective HIV cure. Once a person has HIV, they will remain infected for life. If the HIV is left untreated, it gradually progresses to become Acquired Immuno-Deficiency Syndrome (AIDS) (2).

In contemporary Australia AIDS is very rare, and only 0.14% of all adults have HIV. This is due to rapid uptake of Pre-Exposure Prophylaxis (PrEP) in combination with highly effective treatment options. Most Australians living with HIV who have ongoing treatment can expect to live long and healthy lives without ever developing AIDS (3,4).

Confidentiality and sensitivity

Healthcare practitioners must maintain all clients' privacy and confidentiality. This is especially important when working with people

living with HIV, because people may be concerned about the stigma and discrimination associated with their HIV and related conditions. Learn more about how this relates to [clinical practice for medical and allied health practitioners](#).

Transmission

A person who has HIV can transmit HIV to another person via blood, semen, pre-seminal fluid, rectal fluids, vaginal fluids and breast milk (5). People who maintain an undetectable HIV viral load through the consistent use of medication are unable to transmit the virus to a HIV-negative person; this is known as the "U=U" (Undetectable = Untransmissible) concept.

Transmission during pregnancy

The transmission rate of HIV from mother to child is very low in Australia. This is due to effective antiretroviral treatment and maintenance of a stable undetectable viral load (<50 copies/ml). With these factors, women have a 1 in 1000 chance of transmitting HIV to their baby during pregnancy and delivery. HIV-positive women receiving treatment with a stable undetectable viral load have a 1 to 2% chance of passing HIV to their baby during a 12 month breastfeeding period (6).

Diagnosis and treatment

The primary tests for diagnosing HIV include the enzyme linked immunosorbent assay (ELISA) and western blot tests. Initially an ELISA test is used and if positive, the western blot is administered to confirm the diagnosis (4).

No cure currently exists, but with proper medical care in most cases, HIV can be controlled. The medicine used to treat HIV is called antiretroviral therapy (ART). The ART medication, which needs to be taken daily, dramatically prolongs the lives of people infected with HIV. The aim of ART treatment is to reduce the amount of HIV virus in the blood to undetectable levels. Controlling HIV in this way allows the immune system – measured by CD4 cell count – to return to optimal functioning. HIV treatment has advanced considerably, and current medication regimens may often involve one pill, taken once daily (5).

Some antiretroviral medicines may need to be taken with food and some without. A discussion with the patient surrounding drug and food timing can be beneficial to ensure ART consistency (7).

Nutrition impacts

Since the introduction of ART, the life expectancy of people living with HIV (PLHIV) has increased to near to that of the general population. General healthy eating, exercise and a healthy lifestyle (such as minimising alcohol and quitting smoking) are important for PLHIV as it can help to minimise symptoms, reduce the side effects of medication, improve resistance to other infections and complications, and improve quality of life (8,9). A summary of the food and nutrition implications for typical HIV medications – including food timings, recommended foods to avoid, and nutrition impact symptoms – can be found in [this comprehensive paper](#) (7).

Some nutrition issues are known to occur with greater frequency among PLHIV compared to the general population. These can result from the HIV infection, ART, the impacts of shame and stigma, as well as food and exercise behaviours. These impacts include:

- high blood cholesterol, hyperlipidaemia and increased cardiovascular risk (7,10)
- high risk of alterations in glucose metabolism after initiation of ART (11)
- decreased bone mineral density with all ART regimens potentially due to increase bone catabolism after viral suppression (12)
- vitamin D deficiency (13)
- gastrointestinal symptoms: flatulence, nausea, anorexia, constipation, diarrhoea and taste changes (particularly at the start of treatment) (7)

Emerging areas in the HIV paradigm which can affect nutritional intake for a PLHIV are ageing and HIV-associated neurocognitive disorders (HAND). HAND is a formal diagnosis and can occur at any age. It affects memory, language, attention span, concentration, planning, judgement and doing difficult tasks. HAND could also reduce a person's independence and quality of life. Learn [more about HAND](#) (14).

Nutrition practice tips

When well, PLHIV are encouraged to follow the same principles of healthy eating that are recommended for the general population to maintain lean muscle mass, prevent nutrient deficiencies, and optimise nutritional quality of life. Protein and energy requirements are the same as for the general population when a PLHIV is well. The Australian Guide to Healthy Eating can be used as a guide to ensure that PLHIV are eating a well-balanced diet with an adequate intake of essential nutrients (15).

If a person is experiencing gastrointestinal symptoms as a result of ART, dietary management strategies to alleviate nausea, vomiting, anorexia, diarrhea, constipation, taste changes or reflux will assist in reducing discomfort and improving capacity to continue ART (7). If metabolic changes due to medications, HIV or lifestyle behaviours are evident, then evidence-based dietary guidelines for the treatment of dyslipidaemia, impaired glucose metabolism or decreased bone mineral density will typically be appropriate (16). If dietary management is not effective in relieving nutrition impact symptoms or metabolic complications, consider discussing with the medical treating team regarding whether changes in ART medication plans may be appropriate (16).

Nutrition practice tips for elderly people living with HIV

When the effects of ageing are evident, following dietary management principles for the ageing person with HIV is the same as for the general elderly population. When the effects of HAND are evident, referrals to community services, a geriatrician, or occupational therapy may need to be considered (17). A person living with HIV who presents with wasting needs to be fully assessed for all possible aetiologies (such as nutrition impact symptoms, depression, increased energy requirements) before commencing nutrition intervention to reverse wasting and aiming to increase energy intake (18).

Nutrition recommendations for pregnant people living with HIV

Pregnant people who have HIV are advised to follow the Australian dietary guidelines for pregnancy. It is also important that after birthing, mothers and their partners are well supported with encouragement and education on formula feeding their babies (3). Appropriate food and hydration hygiene is important for PLHIV, especially if their CD4 count is low (below 200 cells/mm³) as there is an increased risk of contracting food and water-borne diseases. It is important to discuss food hygiene and to ensure drinking water is safe for consumption. There are lower risks of food-borne illness in those with good immune function compared to those with advanced disease (19).

Nutrition impacts of antiretroviral therapy

It is important to be mindful that different ART medications will have differing nutrition considerations, food interactions, and interactions with other medications and herbal supplements. Some ARTs require food for optimal absorption, while others are best taken on an empty stomach; some require a person to avoid alcohol. For example, if taking elvitegravir, dolutegravir or raltegravir, it is important to avoid antacids or mineral supplements (magnesium or calcium) within two hours of each dose of ART to ensure adequate absorption (20). Some herbal remedies are known to interact with ART, reducing their absorption, and therefore should be avoided. These include St John's wort, garlic supplements (garlic in food is allowed), African potato, and sutherlandia. There may also be interactions between ART and borage oil, ginkgo biloba, liquorice, milk thistle and valerian (21). A more complete list of dietary and supplement considerations can be found in [this paper](#) (7).

Food insecurity

A study of food insecurity across six health sites in Sydney in 2018 found that 47% of PLHIV were food insecure (22). Women and Aboriginal

and Torres Strait Islander PLHIV were more likely to experience food insecurity than other demographic groups. Food insecurity is an essential factor for dietitians to consider and assess when working with PLHIV, as it not only impacts physical health, but also compounds mental health concerns, stigma and shame that are likely to be more prevalent among PLHIV. Dietitians can access the Food Security MHANDi resource through the Dietitians Australia resource library.

Additional resources

- [National Association of People living with HIV/Aids](#)
- [Australian Federation of AIDS Organisations](#)
- HIV Symptom Management Resources (access via Dietitians Australia resource library)
- [Positive Life NSW](#)
- [Australasian Society for HIV, Viral Hepatitis and Sexual Health Medicine](#)
- [ACON](#)
- [The Albion Centre](#)
- [MHANDi](#) resources: Nutrition in food insecurity, Depression and anxiety, Psychotropic medications

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Afterword: When working to improve the mental health and wellbeing of others, it's also important to look after your own mental health. Personal life stress, and stress related to work can affect your mood, thoughts and feelings in different ways, at different times. Remember to be mindful of your own wellbeing and make time to take care of your mental health at work, such as debriefing, taking a short walk/break outdoors, seeking support, and practising self-care. If any of the topics discussed in this resource brought up any distress for you, you can find helpful resources at Beyond Blue, Head to Health, and Mental Health Australia.

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