

Australian and New Zealand Paired Kidney Exchange Program

Protocol 13: *Strongyloides stercoralis* Screening for Live Donors



***Strongyloides stercoralis* Screening for Live Donors**

Strongyloides stercoralis is a soil transmitted helminth which can be pathogenic to humans especially in the immunocompromised population. It is most often found in the tropics, subtropics and in warm temperate regions and hence living kidney donors who live, have lived or had prolonged travel to such regions carry a potential risk of transmission. There are no national prevalence studies of *Strongyloides stercoralis* in Australia, but one study demonstrated a seropositivity rate of 32 per 100,000 population on sera tested 2012-2016. Of note it is endemic to rural and remote regions in Australia: Queensland, Northern Territory, Western Australia, northern South Australian and northern areas of New South Wales with seropositivity rates registered higher 260-996/100,000 population

What Are Risk Factors for strongyloidiasis?

Strongyloidiasis is found more often in the following people:

- Those that was born in or had travelled to a *Strongyloides*-endemic area. These include:
 - Queensland, Northern Territory, Western Australia, north of South Australian and northern areas of New South Wales
 - South-East Asia, Africa, South American tropical and subtropical regions, India and the Pacific Islands

It is also generally more common in people who:

- Live in rural areas
- Work in agriculture
- Live in or travel to Aboriginal communities
- Are socioeconomically disadvantaged

Screening Tests for strongyloidiasis include:

- All donors should have strongyloides serology during their assessment
 - ELISA for IgG to filariform larvae. Positive serology indicates infection with a sensitivity of 84-95% and specificity 82-100% depending on the assay used.
- A donor's full blood count; eosinophilia may or may not be present.
- Stool Harada culture with *Strongyloides* PCR is also used by some units either for screening or for monitoring following a positive serology result although this is not required by ANZKX and is up to unit preference.

Donor is positive for *Strongyloides* Infection: Treatment

A donor enrolled in ANZKX is considered positive for Strongyloides infection when positive serology is present.

Infected donors should be treated with 4 doses of ivermectin. These are given as 200 mcg/kg orally daily on 2 consecutive days. Due to the potential of the persistence of migrating larvae and eggs in tissues this treatment cycle should be repeated in 2 weeks. Therefore, the recommended treatment is on days 1,2,15,16.

The ANZKX program should be informed of the positive serology and details of treatment and this will be passed on to the recipient unit when the donor is matched. However, a diagnosis of latent strongyloidiasis in a donor does not preclude kidney donation based on reported success of transplanted organs from antibody positive donors to recipients who received prophylactic treatment.

Due to the possibility of reinfection in donors who have been previously treated, we recommend:

- If the donor was treated for strongyloides less than 6 months prior to donation and they do not live in or have not travelled to an endemic area, then they do not require treatment again prior to donation.
- If the donor was treated for strongyloides more than 6 months prior to donation, they should have repeat serology performed. If this is positive then they should receive treatment again prior to donation, using the same treatment protocol as above.



References:

- 1 Considerations for Screening Live Kidney Donors for Endemic Infections: A Viewpoint on the UNOS Policy. M Levi et al, American Journal of Transplantation 2014; 14: 1003–1011
- 2 <https://www.cdc.gov/parasites/strongyloides/index.html>
- 3 <https://nt.gov.au/wellbeing/health-conditions-treatments/parasites/strongyloidiasis>
- 4 Muñoz J et al. Evidence-Based Guidelines for Screening and Management of Strongyloidiasis in Non-Endemic Countries. American Journal of Tropical Medicine and Hygiene Vol. 97 Issue 3, pp. 645–652, 2017.
- 5 Mixed-method analysis of screening for *Strongyloides stercoralis* prior to immunosuppression: a problem of limited bandwidth? Stephen Muhi , Dong-Kyoon Ko, Sarah L. McGuinness, Beverley-Ann Biggs , Siddhartha Mahanty and Clare Delany. Internal Medicine Journal 52 (2022) 790–799
- 6 Accuracy of molecular biology techniques for the diagnosis of *Strongyloides stercoralis* infection—A systematic review and meta- analysis. Dora Buonfrate et al. PLOS Neglected Tropical Diseases 12(2): e0006229. <https://doi.org/10.1371/journal.pntd.0006229>.
- 7 *Strongyloides stercoralis*: Systematic Review of Barriers to Controlling Strongyloidiasis for Australian Indigenous Communities. Miller A et al. [PLoS Negl Trop Dis](https://doi.org/10.1371/journal.pntd.0006229). 2014 Sep; 8(9): e3141.
- 8 Seropositivity and geographical distribution of *Strongyloides stercoralis* in Australia: A study of pathology laboratory data from 2012–2016. Shield J et al. PLOS Neglected Tropical Diseases, March 9, 2021 1-20



VERSION CONTROL			
Version	Date	Author	Comments
V 1.0	May 2023	ANZKX Team	New protocol created for <i>Strongyloides stercoralis</i> screening for Live Donors.

