# Snail Dissections

Posted by Anonymous on Tue, 2016-07-19 19:43

Snail Dissections: Hi I have a teacher that wants to do a snail dissection with 13 year old students. I thought we were not allowed to do them due to the number of parasites that snails can carry. Is this the case? As we have not purchased laboratory breed snails.

**Voting:**
No votes yet

**Year Level:**
8
**Laboratory Technicians:**
Laboratory Technicians

Showing 1-1 of 1 Responses

# Snail Dissections

Submitted by on 29 July 2016

Answer reviewed 17 January 2023

Garden Snails are found throughout south eastern Australia.  They were introduced to Australia from Europe over 120 years ago and are now established in urban areas.  They are most commonly found in managed gardens and disturbed areas, rather than native bushland.  Most native snails are restricted to areas with native vegetation.

Snails are molluscs – a type of invertebrate (without a backbone). They belong to the class Gastropoda which possess a well-developed head with mouth, tentacles and eyes. They have a soft body containing reproductive and digestive organs and a large foot with a creeping sole. They are hermaphrodites, having both male and female reproductive cells, and have the ability to reproduce without requiring a mate.

Most land snails have a developed a pulmonary cavity or lung. They also have a shell that houses and protects the snail's soft body parts. Snails eat a variety of foods and can be called omnivores. While some snails feed on plant material, others are carnivorous, eating small invertebrates such as insects and other snails and slugs.

The likelihood of common garden snails being infected with parasite larvae is low and the risk of infection comes from eating the raw snails, which could be infected with parasite larvae. It is advisable to exercise caution when handling terrestrial gastropods (land snails) and to ensure that hands are thoroughly washed after any contact with snails.

## Jurisdictional legislation and policies:

School Animal Ethics Committee (SAEC) approval is required when certain animals are used in schools for scientific purposes, teaching activities or classroom observation. The animal research decision guide can be found on the *NHMRC* Australian code for the care and use of animals for scientific purposes 8th edition (2013).[1] It is essential to consult your school or school sector to determine the policies and procedures they require you to follow regarding animal dissection. Science ASSIST has developed an information sheet – Support for school science[2] with links to state and territory legislation and policies.

When considering dissections in schools, it is important to take into account the ethical and safety concerns involved. Schools should consider using dead whole animals e.g., fish, crustaceans and molluscs that are suitable for human consumption and therefore disease free, which can be purchased readily from food outlets. Alternatively, consider using prepared specimens, which can be purchased from biological supply companies. Small vertebrate and invertebrate animals can also be purchased through authorised biological companies.

## Ethical considerations:

Each school or school sector may make the ethical decision regarding whether they will permit the dissection of animals, in conjunction with the reporting requirements from their relevant animal ethics committee. Dissection activities using invertebrates such as snails, may be carried out without the prior approval of the committee.

It is recommended that schools consider the educational objectives for the activity and explore the ethical considerations with students. There is little scientific evidence on the potential of pain or distress experienced by invertebrates but some research has been conducted on the best method of inducing unconsciousness with the minimum distress and pain.[3] Students should not be forced to participate in a dissection and alternative activities such as videos and virtual dissections can be used for these students instead, as well as to supplement the actual activity. See references below for links.

Science ASSIST have answered related questions which cover various safety aspects of dissections see:

Piglet Dissection

Preparation of Equipment for Dissections

Dissecting cane toads in WA

Dissection materials

## Safety considerations:

**For the safety of staff and students, it is essential that all materials used for dissections are free from disease and sourced from a supplier of food for human consumption or from a biological supplier. We advise against dissecting road kill or dead animals brought in from the family farm!**

**Science ASSIST recommends** that snails required for snail dissections, are sourced from either a food outlet, e.g., a snail farm that supplies restaurants, or a biological supplier.

## Additional Information:

Snails can harbour parasites. There have been a number of reports where **land snails have been eaten** and have infected humans with their parasites and caused serious diseases. For example:

- ***Angiostrongylus cantonensis*:** It is estimated that 5% of common garden snails in and around Sydney, NSW; contain larvae of the parasite *Angiostrongylus cantonensis*, commonly known as the rat lungworm. It is more widespread in Brisbane and occurs on the coast from far north Queensland down to Jervis Bay, NSW. The snails and slugs (molluscs) are infected when they come into contact with larvae in the rat's faeces. These larvae go through developmental stages in the mollusc, and the cycle is completed when slugs and snails are eaten by rats. It becomes a health problem when the slugs and snails are accidently eaten by dogs, wildlife species and humans.4
- ***Brachylaima cribbi*:** Introduced European land snails are common in southern Australia, and their parasites can infect people who accidentally eat them. The parasitic fluke worm *Brachylaima cribbi* is a small trematode flatworm, up to 6mm long that lives as a parasite in the intestines of mammals, birds, and reptiles. It uses land snails as intermediate hosts. The snails become hosts for the worm when they eat their eggs in animal faeces. These then hatch in the gut to produce 'sporocyst' larvae known as cercariae which pass into the environment through the snail's slime trail and infect other snails. When mammals, birds and reptiles eat the snails, juvenile larvae are released, going on to develop into mature adult worms in the small intestine. People cannot be infected by the eggs of the worm, only by ingesting the juvenile worms from the snail.5

Therefore, raw snails should not be eaten and care should be taken with food preparation to ensure that all vegetables are thoroughly washed prior to consumption to remove any snails, so that they are not accidentally eaten.

## Information on Snail dissections:

The following websites have detailed information regarding terrestrial snail dissections, YouTube videos, basic snail anatomy and supplies.

YouTube website, (2020, October 29), Holyoak, A., '*Snail dissection - the garden snail Helix, Phylum Mollusca, Class Gastropoda'*, retrieved from https://youtu.be/VY39P-IaMS0

YouTube website, (2013, April 22), Park, J., '*Terrestrial Snail Dissection – Coe'* retrieved from https://youtu.be/3YUpON4-c6M

Wikipedia website, (2023, January 4),*'Land snail',* retrieved from https://en.wikipedia.org/wiki/Land_snail

Minibeast Wildlife website, (accessed 2022, January), retrieved from https://www.minibeastwildlife.com.au/resources/garden-snails/ supplier

## References


1 National Health and Medical Research Council (NHMRC) website, (updated 2021), *Australian code for the care and use of animals for scientific purposes 8th edition*, retrieved from https://www.nhmrc.gov.au/about-us/publications/australian-code-care-and-use-animals-scientific-purposes/australian-code-care-and-use-animals-scientific-purposes-code

2 Science ASSIST website, (2022, August), *'Science ASSIST Information sheet – Support for school science'*, retrieved from https://assist.asta.edu.au/resource/4798/science-assist-information-sheet-support-school-science

3 National library of medicine website, Gilbertson, C. R. and Wyatt, J. D., Journal of the American association laboratory animal science, V 55(5): 577–581 (2016, September), *'Evaluation of Euthanasia Techniques for an Invertebrate Species, Land Snails (Succinea putris)',* retrieved from https://pmc.ncbi.nlm.nih.gov/articles/PMC5029829/

4 NSW Government, NSW Health, (2019, March 6), '*Rat lung worm disease (Angiostrongylus cantonensis) factsheet',* retrieved from https://www.health.nsw.gov.au/Infectious/factsheets/Pages/rat-lung-worm.aspx

5 CSIRO publishing website, Butcher, A.R., Microbiology Australia 37(1) 30-33, (2016, February 11), ' Children, snails and worms: the Brachylaima cribbi story', retrieved from https://www.publish.csiro.au/ma/ma16012


---