Literature seminar 4: Food uptake & digestion

The main topic for the discussion is food processing and the impact of temperature. I have chosen four papers dealing with different aspects of this – 1) temperature and postprandial behaviour, 2) metabolism and SDA (specific dynamic action) and 3) digestive processes. In addition, I have made suggestions for further reading if you what to learn more about these questions.

Each of you should be prepared to give a brief introduction/overview of each of the papers (aim, methods, main results and conclusions). When you read the papers, also make notes of question you would like to discuss (things you find extra interesting or simply things you don’t understand and want the rest of the group if possible, to explain). You should be able to download the papers via the university library but there will also be a copy of each in “Kurssal 2” that you may copy/scan.

1. “Postprandial thermophily”
   - Schuler et al. (2011) Food consumption does not affect the preferred body temperature of Yarrow’s spiny lizard (Sceloporus jarrovi). J Thermal Biol 36:112–115

Take special notice of the methodological aspects of these papers. What could be possible reasons for the contrasting results? How would you go ahead and try to find the “true” answers? It may also be useful to have a look at this paper:

2. Metabolism and SDA

What is SDA? Which (endogenous) processes determine the SDA? What is the significance of a reduced SDA duration?

3. Digestive processes

This paper is mainly to give an example of one digestive process affected by temperature (and how Antarctic fish have solved the problem). What other digestive mechanisms are likely to be affected? How?

Overall discussion:
What is “digestive efficiency”? Is shorter digestion time always better? Possible downsides? How can that be counteracted?
What additional factors may affect postprandial behaviour? Species effects vs habitat and/or food type?

Further reading
Here are some additional papers on the subject that may be of interest