

OBESITY

Science, medicine and society



A complete advanced undergraduate/graduate course with:

- 19 online lectures by leading authorities
- Resources for workshops, tutorials, journal clubs, projects and seminars
- Suggested exam questions and model answers
- Multiple choice questions and answers
- Recommended reading: original papers and review articles



View the content of the course
on our website: hstalks.com/Obesity



View our in-depth HSTalks:
hstalks.com/CoursesBrochure

Course module with video lectures, material for tutorials (case studies, projects, workshops and recommended reading), multiple choice questions and suggested exam questions with model answers. A comprehensive course on a subject of major importance.

The material is especially designed to support research and teaching staff when presenting a comprehensive course at graduate or advanced undergraduate level with seminars, journal clubs, laboratory exercises, data workshops, online tests and end of course examinations.

The course is also suitable for continuing professional development/education programmes.

This brochure provides brief details of the complete module, including the lectures, lecturers and additional learning material.

Who is the course for?

The comprehensive material is especially suitable for teachers and researchers who wish to offer courses on specialist subjects to small groups of students (or even a single student) when it is not possible to justify the time and expense of preparing, internally, a course or there is not the range of expertise available locally to do so. All the lecturers are highly regarded experts in their fields and few institutions are likely to have a comprehensive group of faculty members with a similar range of experience and knowledge of the subject matter.

The course material is designed to be used by local faculty and staff acting as course directors, tutors and mentors.

The material is suitable for flipped classroom, blended, team and distance learning courses.

New courses are time consuming and expensive to create. These modules cut both the cost and the time, enabling a wider range of options to be offered on specialist topics. Graduate students can take the courses, mentored by their supervisors, while pursuing their research.

Ideal for Virtual Learning Environments (VLE)

All course material, including the additional learning material, is arranged in a standard format that allows easy embedding into virtual learning environments such as Moodle, Blackboard or your institute's own system.

Supporting learning and teaching goals

In an age when faculty and staff face ever greater demands on budgets and time, these lectures and additional learning material will be of great help when preparing and delivering graduate and advanced undergraduate courses.



Course Summary

The prevalence of obesity is rising in both developed and non-developed countries across the globe. This constitutes a major public health problem with significant social and fiscal implications: obesity has a range of co-morbidities including type 2 diabetes and its complications, respiratory problems including sleep apnoea and asthma, and osteoarthritis. It is also frequently associated with mental distress, including depression. It is easy to dismiss obesity as a condition caused by some combination of greed, laziness and poor self-control, but in fact, when severe, it is a very complex medical condition that is highly intractable to current treatment – in many cases, the only really effective therapy is surgery. In this series of lectures we take an in-depth look at this very complex disease, considering its pathogenesis, co-morbidities, therapeutic approaches and public health measures. Our objective is to give course participants an up-to-date and well-rounded view of the topic, including consideration of future prospects for prevention and treatment of this chronic, progressive, disfiguring and disabling condition.



Editor: Prof. Alexandra Blakemore
Imperial College London, UK



Editor: Dr. Andrew Walley
St. George's University of London, UK

**The course
module is
designed for:**

This course is suitable for advanced degree students and those currently in the later part of their undergraduate degree, as well as researchers and practitioners in the field of obesity and related areas.



Course Lectures

> What is obesity - epidemiology

Prof. Alexandra Blakemore
Imperial College London, UK



What is obesity - definition

Dr. Andrew Walley
Institute of Medical & Biomedical Education (IMBE),
St. George's University of London, UK



What is obesity - physiology

Prof. Alexandra Blakemore
Imperial College London, UK



Obesity: the role of fetal programming

Dr. Jess Buxton
University College London, UK



Childhood obesity

Dr. Mars Skae
Royal Manchester Children's Hospital, UK



Dysregulated eating behaviour, eating disorders and obesity

Prof. Ulrike Schmidt
King's College London, UK



Adipose tissue biology

Dr. Constantinos Christodoulides
Oxford University, UK



Diabetes, obesity and mechanisms of remission after bariatric surgery

Prof. Tricia Tan
Imperial College Healthcare NHS Trust, UK



Obesity and asthma

Prof. Anne Dixon
University of Vermont, USA



Obesity and women's health

Dr. Thomas Barber
University of Warwick, UK



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➤ Obesity and psychology

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Hormones, feeding and animal models

Dr. Samantha Scholtz

Imperial College London,
West London Mental Health Trust, UK



Prof. Carel le Roux

University College Dublin, Ireland



Obesity and the hedonic response

Dr. Tony Goldstone

Imperial College London, UK



Genetics of monogenic obesity

Prof. Dr. Johannes Hebebrand

University Hospital Essen, Germany



Prof. Dr. Anke Hinney

University Hospital Essen, Germany



Genetic epidemiology of obesity

Prof. Ruth Loos

Icahn School of Medicine at Mount Sinai, USA



Metabolic communication in development
and control of obesity

Prof. Elaine Holmes

Imperial College London, UK



Obesity management: lifestyle and bariatric surgery

Prof. John Wilding

University of Liverpool, UK



Obesity, present and future therapies

Prof. Sir Stephen Bloom

Imperial College London, UK



Towards personalised medicine in obesity

Prof. Alexandra Blakemore

Imperial College London, UK





Examples of Course Materials

For each lecture, the course offers tutorials, workshops, recommended reading, multiple-choice questions, and suggested exam questions with model answers.



HST Moodle My Courses ▸ Obesity

Tutorial: Obesity: the role of fetal programming

Lecturer: Dr Jess Buxton, University College London, UK

In developed nations, up to 30% of all women are now obese. There is increasing evidence to support a role for fetal programming in the link between maternal obesity and the cardiovascular and metabolic health of adult offspring (reviewed by Gaillard, 2015). These effects include an increased risk of obesity in the children of obese mothers, raising the prospect of a 'vicious cycle' of excess adiposity and its harmful effects being passed from one generation to the next (Boone-Heinonen et al, 2015).

Read the two articles below and discuss, focussing on the following:

1. What kinds of studies have been carried out – or could be carried out in future – that might help disentangle the effects of fetal programming from those of shared genetic and environmental factors on the transmission of obesity risk from a mother to her offspring?
2. What are the relative strengths of these different types of studies?
3. What interventions might help to break the 'vicious cycle' of obesity in future generations?
4. What about fathers?




Exam Questions and Model Answers

Question 1

Not yet answered
Marked out of 1.00

 Flag question

 Edit question

What is the focus of the DOHaD field of research? Describe how studies of cardiometabolic disease risk in individuals, conceived during the Dutch Hunger Winter famine of 1944-1945, have contributed to the DOHaD field.




Multiple-choice questions and answers

Question 4

Not yet answered
Marked out of 1.00

 Flag question

 Edit question

The increased risk of obesity and type 2 diabetes in the yellow agouti mouse model is associated with:

Select one:

- ☐ a) Decreased DNA methylation levels at the yellow fur colour version of the agouti gene
- ☐ b) An excess of folic acid in the mother's diet during pregnancy
- ☐ c) An excess of folic acid in the mouse's diet during weaning
- ☐ d) Increased DNA methylation levels at the yellow fur colour version of the agouti gene
- ☐ e) A lack of folic acid in the mouse's diet during weaning.



Recommended reading supporting each lecture: Original research papers and review articles

Recommended Review Articles

1. IOM (Institute of Medicine). Examining a Developmental Approach to Childhood Obesity: the Fetal and Early Childhood Years: Workshop Summary. The National Academies Press, Washington, DC (2015).
2. Rooney, K, Ozanne, SE. Maternal over-nutrition and offspring obesity predisposition: targets for preventative interventions. International Journal of Obesity (2011) 35: 883–890.
3. Pembrey M, Saffery R, Bygren LO. Human transgenerational responses to early-life experience: potential impact on development, health and biomedical research. Journal of Medical Genetics (2014) 51:563-72.



How to access the course

Extracts of lectures can be viewed at hstalks.com/biosci/. The full length lectures can be viewed by all members of universities, colleges and medical schools currently subscribing to The Biomedical & Life Sciences Collection. Institutions that do not subscribe to The Biomedical & Life Sciences Collection may take annual licenses at US \$2,000 covering an unlimited number of students.

Full supporting material: video lectures, material for tutorials (case studies, projects, workshops and recommended reading), multiple choice questions and suggested exam questions with model answers are provided to faculty members of subscribers.

To subscribe, obtain additional information and/or the additional learning material contact Dr. Eyal Kalie at eyalk@hstalks.com.

Upload to your VLE

The complete course (lectures and additional learning material) can be loaded into Moodle, Blackboard and other virtual learning environments.



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