

## **Core concept / skin biology videos Q &A**

(For links to videos see the [reestheskin.me](https://reestheskin.me) teaching page)

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### **Skin biology video 1 questions: Introduction to skin biology.**

- Q1 Which figure is nearer to average skin thickness, 100 microns or 1mm?
  - Q2 Which is the more cellular compartment, the epidermis or the dermis?
  - Q3 Which is thicker, the epidermis or the dermis?
  - Q4 Name 3 cell layers or compartments that make up the epidermis.
  - Q5 Is melanin solely located within melanocytes?
  - Q6 Name two extracellular components / molecules of the dermis.
  - Q7 What cells synthesise collagen?
  - Q8 Mast cells are related to what other cell type, and what might they release?
  - Q9 Name three appendageal structures. What is the predominant cell type?
  - Q10 Name 10 structures or cells shown below in the image
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### **Skin biology video 2 questions: Sunburn, DNA and skin cancer**

- Q1 Erythema peaks at 6 hours? True or false?
  - Q2 The UVR induced erythema is due to vasodilation of which vessels?
  - Q3 If no erythema is present, no DNA damage has occurred? True or false
  - Q4 Taking aspirin a few hours after sun exposure reduces DNA damage and cancer risk?
  - Q5 Which is more likely to induce erythema: X Joules at 320 nanometers (nm) or X Joules at 390 nanometers (nm)?
  - Q6 What is the mode of inheritance of xeroderma pigmentosum?
  - Q7 The number of skin cancers patients with xeroderma pigmentosum develop varies. Give two reasons for this.
  - Q8 In those 'normal' people without xeroderma pigmentosum, why do cancers occur, and why are they related to DNA damage if repair mechanisms exist?
  - Q9 Freckles represent clones of melanocytes? True or false
  - Q10 In what patient groups do we see most freckling? Why?
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### **Skin biology video 3 questions: Pigmentation.**

- Q1 Which is more protective, constitutive or facultative melanin?
  - Q2 What type of pigmentation is tanning?
  - Q3 Melanocytes are derived from what cell lineage?
  - Q4 In albinism, melanocytes numbers are deficient. True or false?
  - Q5 Vitiligo is characterised by focal areas of hyperpigmentation. True or false?
  - Q6 If the ratio of eumelanin to pheomelanin is low, what hair colour is more likely?
  - Q7 Why is melanin synthesised in melanosomes?
  - Q8 Each melanocyte communicates with one keratinocyte. True or false?
  - Q9 What is the mode of inheritance of albinism?
  - Q10 All cases of albinism are due to a mutation in the gene tyrosinase (the rate limiting enzyme in melanin biosynthesis). True or false?
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**Skin biology video 4 questions: Urticaria**

- Q1 Why do you think nettles induce the rash of urticaria?
- Q2 Urticaria is itchy. Can you see any value in humans developing such responses following exogenous "attack" (such as from nettles?)
- Q3 Mast cells are found just in skin? True or false
- Q4 What are the three components of the triple response?
- Q5 What type of histamine receptors are involved in the triple response?
- Q6 How do we know that non-histamine mediators are important in urticaria?
- Q7 Is solar urticaria just due to UVR, or can visible light be involved?
- Q8 Some patients develop urticaria when they take opioids. Why?
- Q9 Is IgE essential to the mechanism of all types of urticaria?
- Q10 Name two types of physical urticaria
- Q11 What the implications of solar urticaria being transmissible?

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**Skin biology video 5, questions: Itch**

- Q1 What do we mean by 'crossed' in the conduction of itch?
- Q2 What does the term multidimensional mean in this context?
- Q3 Can histamine induce pain and itch?
- Q4 Is itch always conducted along C fibres?
- Q5 How does pain inhibit itch?
- Q6 In what disorder is histamine important in the mediation of itch. Name two disorders in which histamine does not play a role in mediating itch.
- Q7 Do itch fibres only conduct the modality of itch?
- Q8 What have nails got to do with all of this?
- Q9 What is the relation between grooming and itch in many mammals?
- Q10 Are scratch marks usually of similar size? Significance?

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**Skin biology video 6 questions: Skin Barrier**

- Q1 Why is filaggrin so named?
- Q2 What does transglutaminase do?
- Q3 Explain the positive feedback of barrier assault.
- Q4 What does the term stratified squamous epithelium refer to
- Q5 What does the term asymmetrical cell division refer to in the video?
- Q6 Where are the stem cells located in skin?
- Q7 Is the granular layer dead or alive?
- Q8 Teenagers are sometimes said to be not fond of soap. What bits of skin biology do they know about?
- Q9 Why unpick desmosomes?
- Q10 Oestrogen in oestrogen patches penetrates skin well. Thoughts on why?

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**Skin biology video 7 questions: Physics, UVR and the skin**

- Q1 What disease can infrared radiation cause? Why the pattern?
- Q2 Does UVR radiation pass through glass?
- Q3 Can you ever see urticaria as a normal response to UVR?
- Q4 Why can you have different action spectra?
- Q5 Which will produce more erythema: x joules at 330nm or x joules at 350nm?
- Q6 Temperature is a good proxy for UVR exposure. True or false?
- Q7 You cannot get sunburned swimming under water. True or false?
- Q8 UVA accounts for 20% of the erythemal activity of sunshine on the equator. True or false?
- Q9 In photosensitivity caused by drugs, is UVB always more active?
- Q10 It is characteristic of UVA induced photosensitivity to be constant throughout the year. True or false?

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**Skin biology video 8 questions: Blisters, Molecular glues and Pemphigus**

- Q1 When do you see antibodies to desmoglein 1?
- Q2 What does the compensation theory mean (in this particular context)?
- Q3 Name two disorders that target desmoglein 1.
- Q4 What is different about desmoglein expression in the skin and mucosae?
- Q5 Is fogo selvagem a type of pemphigus vulgaris?
- Q6 There are two broad categories of pemphigus vulgaris. Explain.
- Q7 What is the Nikolsky sign?
- Q8 What is meant by the term paraneoplastic in the context of skin disease?
- Q9 Why the Rees paranoia about blistering diseases?

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**Skin biology video 9: KISS (keep it simple stupid!)**

No Q&A available for this video