

Q

For each of the following, state whether it is associated with *Vernal Keratoconjunctivitis (VKC)*, *Atopic Keratoconjunctivitis (AKC)*, or **Both**

- *Seasonality*:

**A**

For each of the following, state whether it is associated with *Vernal Keratoconjunctivitis (VKC)*, *Atopic Keratoconjunctivitis (AKC)*, or **Both**

- *Seasonality*: **VKC** (*vernal* means 'spring'). VKC can be year-round, however.

Q

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- *Seasonality*: **VKC** (*vernal* means 'spring'). **VKC** can be **year-round**, however.

*Year-round VKC is associated with what sort of climate?*

**A**

For each of the following, state whether it is associated with *Vernal Keratoconjunctivitis (VKC)*, *Atopic Keratoconjunctivitis (AKC)*, or **Both**

- *Seasonality: VKC* (*vernal* means 'spring'). **VKC can be year-round, however.**

*Year-round VKC is associated with what sort of climate?*  
Tropical

Q

For each of the following, state whether it is associated with *Vernal Keratoconjunctivitis (VKC)*, *Atopic Keratoconjunctivitis (AKC)*, or **Both**

- **Seasonality.** **VKC** (*vernal* means 'spring'). VKC can be year-round, however.

*One form of allergic conjunctivitis is seasonal in nature. What is it called?*

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- **Seasonality.** **VKC** (*vernal* means 'spring'). VKC can be year-round, however.

*One form of allergic conjunctivitis is seasonal in nature. What is it called?  
It is called 'seasonal allergic conjunctivitis' (SAC)*

**Q** For each of the following, state whether it is associated with *Vernal Keratoconjunctivitis (VKC)*, *Atopic Keratoconjunctivitis (AKC)*, or **Both**

- **Seasonality.** **VKC** (*vernal* means 'spring'). VKC can be year-round, however.

*One form of allergic conjunctivitis is seasonal in nature. What is it called?*

It is called '~~seasonal allergic conjunctivitis~~' (SAC)

?

*By what other name is SAC known?*

**A**

For each of the following, state whether it is associated with *Vernal Keratoconjunctivitis (VKC)*, *Atopic Keratoconjunctivitis (AKC)*, or **Both**

- **Seasonality.** **VKC** (*vernal* means 'spring'). VKC can be year-round, however.

*One form of allergic conjunctivitis is seasonal in nature. What is it called?*

It is called ~~'seasonal allergic conjunctivitis'~~ (SAC)  
*hay-fever conjunctivitis*

*By what other name is SAC known?*

**Hay-fever conjunctivitis**



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- **Seasonality.** **VKC** (*vernal* means 'spring'). VKC can be year-round, however.

*One form of allergic conjunctivitis is seasonal in nature. What is it called?  
It is called '**seasonal allergic conjunctivitis**' (SAC)*

*Just as VKC and AKC are closely related, SAC has a 'partner in crime' as well.  
What is this closely-related condition?*

**A**

For each of the following, state whether it is associated with *Vernal Keratoconjunctivitis (VKC)*, *Atopic Keratoconjunctivitis (AKC)*, or **Both**

- **Seasonality.** **VKC** (*vernal* means 'spring'). VKC can be year-round, however.

*One form of allergic conjunctivitis is seasonal in nature. What is it called?*  
It is called '**seasonal allergic conjunctivitis**' (SAC)

*Just as VKC and AKC are closely related, SAC has a 'partner in crime' as well. What is this closely-related condition?*  
*Perennial allergic conjunctivitis (PAC)*

**Q** For each of the following, state whether it is associated with *Vernal Keratoconjunctivitis (VKC)*, *Atopic Keratoconjunctivitis (AKC)*, or **Both**

- **Seasonality.** **VKC** (*vernal* means 'spring'). VKC can be year-round, however.

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It is called '**seasonal allergic conjunctivitis**' (SAC)*

*Just as VKC and AKC are closely related, SAC has a 'partner in crime' as well.  
What is this closely-related condition?  
Perennial allergic conjunctivitis (PAC)*

*Is PAC seasonal?*

**A** For each of the following, state whether it is associated with *Vernal Keratoconjunctivitis (VKC)*, *Atopic Keratoconjunctivitis (AKC)*, or **Both**

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*One form of allergic conjunctivitis is seasonal in nature. What is it called?  
It is called 'seasonal allergic conjunctivitis' (SAC)*

*Just as VKC and AKC are closely related, SAC has a 'partner in crime' as well.  
What is this closely-related condition?  
Perennial allergic conjunctivitis (PAC)*

*Is PAC seasonal?*

*No (note that in this context, perennial means 'year round')*

**Q**

For each of the following, state whether it is associated with *Vernal Keratoconjunctivitis (VKC)*, *Atopic Keratoconjunctivitis (AKC)*, or **Both**

- *Seasonality: **VKC*** (*vernal* means 'spring'). VKC can be year-round, however.

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It is called 'seasonal allergic conjunctivitis' (SAC)*

*Which type of hypersensitivity reaction (ie, I-IV) is VKC (and AKC)?*

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For each of the following, state whether it is associated with *Vernal Keratoconjunctivitis (VKC)*, *Atopic Keratoconjunctivitis (AKC)*, or **Both**

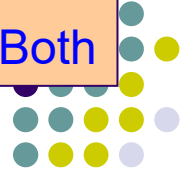
- *Seasonality: **VKC*** (*vernal* means 'spring'). VKC can be year-round, however.

*One form of allergic conjunctivitis is seasonal in nature. What is it called?  
It is called 'seasonal allergic conjunctivitis' (SAC)*

*Which type of hypersensitivity reaction (ie, I-IV) is VKC (and AKC)?  
Type IV*

Q

For each of the following, state whether it is associated with *Vernal Keratoconjunctivitis (VKC)*, *Atopic Keratoconjunctivitis (AKC)*, or **Both**

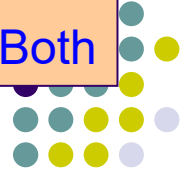


*Speaking of hypersensitivity reactions...*

*How many types of ocular-surface hypersensitivity reactions are there?*

**A**

For each of the following, state whether it is associated with *Vernal Keratoconjunctivitis (VKC)*, *Atopic Keratoconjunctivitis (AKC)*, or **Both**



*Type I*

*Type II*

*Type III*

*Type IV*

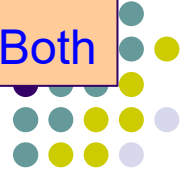
*Speaking of hypersensitivity reactions...*

*How many types of ocular-surface hypersensitivity reactions are there?*



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For each of the following, state whether it is associated with *Vernal Keratoconjunctivitis (VKC)*, *Atopic Keratoconjunctivitis (AKC)*, or **Both**



**Type I**

*Type II*

*Type III*

*Type IV*

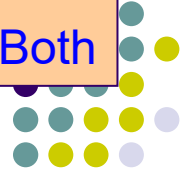
**Type I reactions involve...** [One word that captures the nature of this rxn]  
*Type II reactions involve...*  
*Type III reactions involve...*  
*Type IV reactions involve...*

*Speaking of hypersensitivity reactions...*

*How many types of ocular-surface hypersensitivity reactions are there?*

**A**

For each of the following, state whether it is associated with *Vernal Keratoconjunctivitis (VKC)*, *Atopic Keratoconjunctivitis (AKC)*, or **Both**



**Anaphylaxis**

**Type I**

*Type II*

*Type III*

*Type IV*

**Type I reactions involve...Anaphylaxis**

*Type II reactions involve...*

*Type III reactions involve...*

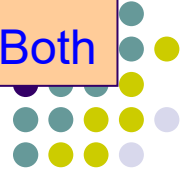
*Type IV reactions involve...*

*Speaking of hypersensitivity reactions...*

*How many types of ocular-surface hypersensitivity reactions are there?*

Q

For each of the following, state whether it is associated with *Vernal Keratoconjunctivitis (VKC)*, *Atopic Keratoconjunctivitis (AKC)*, or **Both**



**Anaphylaxis**

**Type I**

**Type II**

Type III

Type IV

**Type I reactions involve...Anaphylaxis**

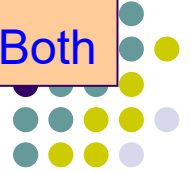
**Type II reactions involve...** [Two words capturing this rxn]

Type III reactions involve...

Type IV reactions involve...

**A**

For each of the following, state whether it is associated with *Vernal Keratoconjunctivitis (VKC)*, *Atopic Keratoconjunctivitis (AKC)*, or **Both**



**Anaphylaxis**

**Cytotoxic Ab**

**Type I**

**Type II**

**Type III**

**Type IV**

**Type I reactions involve...Anaphylaxis**

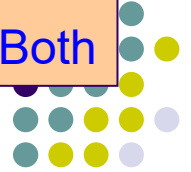
**Type II reactions involve...Cytotoxic antibodies**

Type III reactions involve...

Type IV reactions involve...

Q

For each of the following, state whether it is associated with *Vernal Keratoconjunctivitis (VKC)*, *Atopic Keratoconjunctivitis (AKC)*, or **Both**



**Anaphylaxis**

**Cytotoxic Ab**

**Type I**

**Type II**

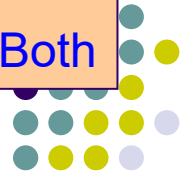
**Type III**

**Type IV**

**Type I reactions involve...Anaphylaxis**  
**Type II reactions involve...Cytotoxic antibodies**  
**Type III reactions involve...** [Three words for this one]  
**Type IV reactions involve...**

**A**

For each of the following, state whether it is associated with *Vernal Keratoconjunctivitis (VKC)*, *Atopic Keratoconjunctivitis (AKC)*, or **Both**



**Anaphylaxis**

**Cytotoxic Ab**

**Immune-complex  
reactions**

**Type I**

**Type II**

**Type III**

**Type IV**

**Type I reactions involve...Anaphylaxis**  
**Type II reactions involve...Cytotoxic antibodies**  
**Type III reactions involve...Immune-complex reactions**  
**Type IV reactions involve...**

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For each of the following, state whether it is associated with *Vernal Keratoconjunctivitis (VKC)*, *Atopic Keratoconjunctivitis (AKC)*, or **Both**



**Anaphylaxis**

**Cytotoxic Ab**

**Immune-complex  
reactions**

**Type I**

**Type II**

**Type III**

**Type IV**

**Type I reactions involve...Anaphylaxis**

**Type II reactions involve...Cytotoxic antibodies**

**Type III reactions involve...Immune-complex reactions**

**Type IV reactions involve... [Three words again]**

**A**

For each of the following, state whether it is associated with *Vernal Keratoconjunctivitis (VKC)*, *Atopic Keratoconjunctivitis (AKC)*, or **Both**



**Anaphylaxis**

**Cytotoxic Ab**

**Immune-complex reactions**

**Cell-mediated reactions**

**Type I**

**Type II**

**Type III**

**Type IV**

**Type I reactions involve...Anaphylaxis**  
**Type II reactions involve...Cytotoxic antibodies**  
**Type III reactions involve...Immune-complex reactions**  
**Type IV reactions involve...Cell-mediated reactions**



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*Anaphylaxis*

*Cytotoxic Ab*

*Immune-complex reactions*

**Cell-mediated reactions**

*Type I*

*Type II*

*Type III*

**Type IV**

*Type I reactions involve...Anaphylaxis*  
*Type II reactions involve...Cytotoxic antibodies*  
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***Type IV reactions involve...Cell-mediated reactions***

*'Cell-mediated reaction'...Which sort of immune cell is doing the mediating?*

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*Cytotoxic Ab*

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*Type I*

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**Type IV**

*Type I reactions involve...Anaphylaxis*  
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*Type III reactions involve...Immune-complex reactions*  
***Type IV reactions involve...Cell-mediated reactions***

*'Cell-mediated reaction'...Which sort of immune cell is doing the mediating?*  
T-helper cells

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*Cytotoxic Ab*

*Immune-complex reactions*

**Cell-mediated reactions**

*Type I*

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*Type I reactions involve...Anaphylaxis*  
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*'Cell-mediated reaction'...Which sort of immune cell is doing the mediating?*  
T-helper cells

*In what way are T-helper cells mediating the reaction?*

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*Immune-complex reactions*

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*Type I*

*Type II*

*Type III*

**Type IV**

*Type I reactions involve...Anaphylaxis*  
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***Type IV reactions involve...Cell-mediated reactions***

*'Cell-mediated reaction'...Which sort of immune cell is doing the mediating?*  
T-helper cells

*In what way are T-helper cells mediating the reaction?*

In Type IV reactions, T-helpers interact with antigens, thereby becoming activated. Once activated, the T-helpers release chemotactic factors that recruit and activate macrophages.

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*Type I*

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*'Cell-mediated reaction'...Which sort of immune cell is doing the mediating?*  
T-helper cells

*In what way are T-helper cells mediating the reaction?*

In Type IV reactions, T-helpers interact with antigens, thereby becoming activated. Once activated, the T-helpers release chemotactic factors that recruit and activate macrophages.

*That's a convoluted process. How long does it take to become clinically apparent?*

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For each of the following, state whether it is associated with *Vernal Keratoconjunctivitis (VKC)*, *Atopic Keratoconjunctivitis (AKC)*, or **Both**

*Anaphylaxis*

*Cytotoxic Ab*

*Immune-complex reactions*

**Cell-mediated reactions**

*Type I*

*Type II*

*Type III*

**Type IV**

*Type I reactions involve...Anaphylaxis*  
*Type II reactions involve...Cytotoxic antibodies*  
*Type III reactions involve...Immune-complex reactions*  
***Type IV reactions involve...Cell-mediated reactions***

*'Cell-mediated reaction'...Which sort of immune cell is doing the mediating?*  
T-helper cells

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In Type IV reactions, T-helpers interact with antigens, thereby becoming activated. Once activated, the T-helpers release chemotactic factors that recruit and activate macrophages.

*That's a convoluted process. How long does it take to become clinically apparent?*

24-72 hours, which is why this reaction is often referred to as *delayed hypersensitivity*

For each of the following, state whether it is associated with *Vernal Keratoconjunctivitis (VKC)*, *Atopic Keratoconjunctivitis (AKC)*, or **Both**



*Anaphylaxis*

*Cytotoxic Ab*

*Immune-complex reactions*

*Cell-mediated reactions*

*Type I*

*Type II*

*Type III*

*Type IV*

*Type I reactions involve...Anaphylaxis*  
*Type II reactions involve...Cytotoxic antibodies*  
*Type III reactions involve...Immune-complex reactions*  
***Type IV reactions involve...Delayed hypersensitivity***

*'Cell-mediated reaction'...Which sort of immune cell is doing the mediating?*  
T-helper cells

*In what way a*  
*In Type IV re*  
*activated, the T-helpers release chemotactic factors that recruit and activate*  
*macrophages.*

***Note that if you remember Type IV as 'delayed hypersensitivity'...***

*That's a convoluted process. How long does it take to become clinically apparent?*  
24-72 hours, which is why this reaction is often referred to as

***delayed hypersensitivity***

For each of the following, state whether it is associated with *Vernal Keratoconjunctivitis (VKC)*, *Atopic Keratoconjunctivitis (AKC)*, or **Both**



*Anaphylaxis*

*Cytotoxic Ab*

*Immune-complex reactions*

*Cell-mediated reactions*

*Type I*

*Type II*

*Type III*

*Type IV*

*Type I reactions involve...Anaphylaxis*  
*Type II reactions involve...Cytotoxic antibodies*  
*Type III reactions involve...Immune-complex reactions*  
*Type IV reactions involve...Delayed hypersensitivity*



*'Cell-mediated reaction'...Which sort of immune cell is doing the mediating?*  
T-helper cells

*In what way a*  
*In Type IV re*  
*activated, the T-helpers release chemotactic factors that recruit and activate*  
*macrophages.*

**Note that if you remember Type IV as 'delayed hypersensitivity'...  
the four forms can be remembered with the mnemonic ACID**

*That's a convoluted process. How long does it take to become clinically apparent?*  
24-72 hours, which is why this reaction is often referred to as



**delayed hypersensitivity**



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- *Seasonality: **VKC*** (*vernal* means 'spring'). VKC can be year-round, however.

*One form of allergic conjunctivitis is seasonal in nature. What is it called?  
It is called 'seasonal allergic conjunctivitis' (SAC)*

*Which type of hypersensitivity reaction (ie, I-IV) is VKC (and AKC)?  
Type IV*

*Which type of hypersensitivity reaction is SAC (and PAC)?*

**A**

For each of the following, state whether it is associated with *Vernal Keratoconjunctivitis (VKC)*, *Atopic Keratoconjunctivitis (AKC)*, or **Both**

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It is called 'seasonal allergic conjunctivitis' (SAC)*

*Which type of hypersensitivity reaction (ie, I-IV) is VKC (and AKC)?  
Type IV*

*Which type of hypersensitivity reaction is SAC (and PAC)?  
Type I*

Q

For each of the following, state whether it is associated with *Vernal Keratoconjunctivitis (VKC)*, *Atopic Keratoconjunctivitis (AKC)*, or **Both**

**Anaphylaxis**

**Type I**

*Cytotoxic Ab*

*Type II*

*Immune-complex reactions*

*Type III*

*Cell-mediated reactions*

*Type IV*

***Type I reactions involve...Anaphylaxis***

*Type II reactions involve...Cytotoxic antibodies*

*Type III reactions involve...Immune-complex reactions*

*Type IV reactions involve...Cell-mediated reactions*

***Briefly, how does an anaphylactic reaction proceed?***

Q/A

For each of the following, state whether it is associated with *Vernal Keratoconjunctivitis (VKC)*, *Atopic Keratoconjunctivitis (AKC)*, or **Both**

**Anaphylaxis**

**Type I**

*Cytotoxic Ab*

*Type II*

*Immune-complex reactions*

*Type III*

*Cell-mediated reactions*

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***Type I reactions involve...Anaphylaxis***

*Type II reactions involve...Cytotoxic antibodies*

*Type III reactions involve...Immune-complex reactions*

*Type IV reactions involve...Cell-mediated reactions*

***Briefly, how does an anaphylactic reaction proceed?***

The binding of  to  receptors on  causes the cells to

A

For each of the following, state whether it is associated with *Vernal Keratoconjunctivitis (VKC)*, *Atopic Keratoconjunctivitis (AKC)*, or **Both**

**Anaphylaxis**

**Type I**

*Cytotoxic Ab*

*Type II*

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*Cell-mediated reactions*

*Type IV*

***Type I reactions involve...Anaphylaxis***

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*Type IV reactions involve...Cell-mediated reactions*

***Briefly, how does an anaphylactic reaction proceed?***

The binding of **antigen (Ag)** to **IgE** receptors on **mast cells** causes the cells to **degranulate**

Q

For each of the following, state whether it is associated with *Vernal Keratoconjunctivitis (VKC)*, *Atopic Keratoconjunctivitis (AKC)*, or **Both**

**Anaphylaxis**

**Type I**

*Cytotoxic Ab*

*Type II*

*Immune-complex reactions*

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*Cell-mediated reactions*

*Type IV*

***Type I reactions involve...Anaphylaxis***

*Type II reactions involve...Cytotoxic antibodies*

*Type III reactions involve...Immune-complex reactions*

*Type IV reactions involve...Cell-mediated reactions*

***Briefly, how does an anaphylactic reaction proceed?***

The binding of **antigen (Ag)** to **IgE** receptors on **mast cells** causes the cells to **degranulate**, with the subsequent release of

**one word**

and other pre-formed inflammatory mediators

A

For each of the following, state whether it is associated with *Vernal Keratoconjunctivitis (VKC)*, *Atopic Keratoconjunctivitis (AKC)*, or **Both**

**Anaphylaxis**

**Type I**

*Cytotoxic Ab*

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*Immune-complex reactions*

*Type III*

*Cell-mediated reactions*

*Type IV*

***Type I reactions involve...Anaphylaxis***

*Type II reactions involve...Cytotoxic antibodies*

*Type III reactions involve...Immune-complex reactions*

*Type IV reactions involve...Cell-mediated reactions*

***Briefly, how does an anaphylactic reaction proceed?***

The binding of **antigen (Ag)** to **IgE** receptors on **mast cells** causes the cells to **degranulate**, with the subsequent release of **histamine** and other pre-formed inflammatory mediators

Q

For each of the following, state whether it is associated with *Vernal Keratoconjunctivitis (VKC)*, *Atopic Keratoconjunctivitis (AKC)*, or **Both**

**Anaphylaxis**

**Type I**

*Cytotoxic Ab*

*Type II*

*Immune-complex reactions*

*Type III*

*Cell-mediated reactions*

*Type IV*

***Type I reactions involve...Anaphylaxis***

*Type II reactions involve...Cytotoxic antibodies*

*Type III reactions involve...Immune-complex reactions*

*Type IV reactions involve...Cell-mediated reactions*

*Briefly, how does an anaphylactic reaction proceed?*

The binding of **antigen (Ag)** to **IgE** receptors on **mast cells** causes the cells to **degranulate**, with the subsequent release of **histamine** and other pre-formed inflammatory mediators

*Sounds fast. How long does it take to become clinically apparent?*



A

For each of the following, state whether it is associated with *Vernal Keratoconjunctivitis (VKC)*, *Atopic Keratoconjunctivitis (AKC)*, or **Both**

**Anaphylaxis**

**Type I**

*Cytotoxic Ab*

*Type II*

*Immune-complex reactions*

*Type III*

*Cell-mediated reactions*

*Type IV*

***Type I reactions involve...Anaphylaxis***

*Type II reactions involve...Cytotoxic antibodies*

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*Briefly, how does an anaphylactic reaction proceed?*

The binding of **antigen (Ag)** to **IgE** receptors on **mast cells** causes the cells to **degranulate**, with the subsequent release of **histamine** and other pre-formed inflammatory mediators

*Sounds fast. How long does it take to become clinically apparent?*

Only minutes (which is why which is why this reaction is often referred to as *immediate hypersensitivity*)

For each of the following, state whether it is associated with *Vernal Keratoconjunctivitis (VKC)*, *Atopic Keratoconjunctivitis (AKC)*, or **Both**

Anaphylaxis  
Type I

Cytotoxic Ab  
Type II

Immune-complex  
reactions  
Type III

Cell-mediated  
reactions  
Type IV

Type I reactions involve...Anaphylaxis  
Type II reactions involve...Cytotoxic antibodies

**For more on hypersensitivity reactions of the ocular surface, see slide-set K21**

The binding of **antigen (Ag)** to **IgE** receptors on **mast cells** causes the cells to **degranulate**, with the subsequent release of **histamine** and other pre-formed inflammatory mediators

*Sounds fast. How long does it take to become clinically apparent?*  
Only minutes (which is why which is why this reaction is often referred to as *immediate hypersensitivity*)

**Q**

For each of the following, state whether it is associated with *Vernal Keratoconjunctivitis (VKC)*, *Atopic Keratoconjunctivitis (AKC)*, or **Both**

- *Seasonality: **VKC** (vernal means 'spring'). VKC can be year-round, however.*
- *Causes a chronic papillary conjunctivitis:*

**A**

For each of the following, state whether it is associated with *Vernal Keratoconjunctivitis (VKC)*, *Atopic Keratoconjunctivitis (AKC)*, or **Both**

- *Seasonality: **VKC*** (*vernal* means 'spring'). VKC can be year-round, however.
- *Causes a chronic papillary conjunctivitis: **Both***

**Q**

For each of the following, state whether it is associated with *Vernal Keratoconjunctivitis (VKC)*, *Atopic Keratoconjunctivitis (AKC)*, or **Both**

- *Seasonality: **VKC** (vernal means 'spring'). VKC can be year-round, however.*
- *Causes a chronic papillary conjunctivitis: **Both***
- *Somewhat smaller papillae:*

**A**

For each of the following, state whether it is associated with *Vernal Keratoconjunctivitis (VKC)*, *Atopic Keratoconjunctivitis (AKC)*, or **Both**

- *Seasonality:* **VKC** (*vernal* means 'spring'). VKC can be year-round, however.
- *Causes a chronic papillary conjunctivitis:* **Both**
- *Somewhat smaller papillae:* **AKC**

Q

For each of the following, state whether it is associated with *Vernal Keratoconjunctivitis (VKC)*, *Atopic Keratoconjunctivitis (AKC)*, or **Both**

- *Seasonality: **VKC*** (*vernal* means 'spring'). VKC can be year-round, however.
- *Causes a chronic papillary conjunctivitis: **Both***
- *Somewhat smaller papillae: ~~AKC~~ **VKC***

*What word is commonly used to describe the size of papillae in VKC?*

**A**

For each of the following, state whether it is associated with *Vernal Keratoconjunctivitis (VKC)*, *Atopic Keratoconjunctivitis (AKC)*, or **Both**

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- *Causes a chronic papillary conjunctivitis: **Both***
- *Somewhat smaller papillae: ~~AKC~~ **VKC***

*What word is commonly used to describe the size of papillae in VKC?*  
**Giant.** VKC is a cause of so-called *giant papillary conjunctivitis (GPC)*



**Q**

For each of the following, state whether it is associated with *Vernal Keratoconjunctivitis (VKC)*, *Atopic Keratoconjunctivitis (AKC)*, or **Both**

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- *Somewhat smaller papillae: ~~AKC~~ **VKC***

*What word is commonly used to describe the size of papillae in VKC?*

**Giant.** VKC is a cause of so-called *giant papillary conjunctivitis (GPC)*

*What word is commonly used to describe the shape of the papillae in VKC?*

**A**

For each of the following, state whether it is associated with *Vernal Keratoconjunctivitis (VKC)*, *Atopic Keratoconjunctivitis (AKC)*, or **Both**

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- *Causes a chronic papillary conjunctivitis: **Both***
- *Somewhat smaller papillae: ~~AKC~~ **VKC***

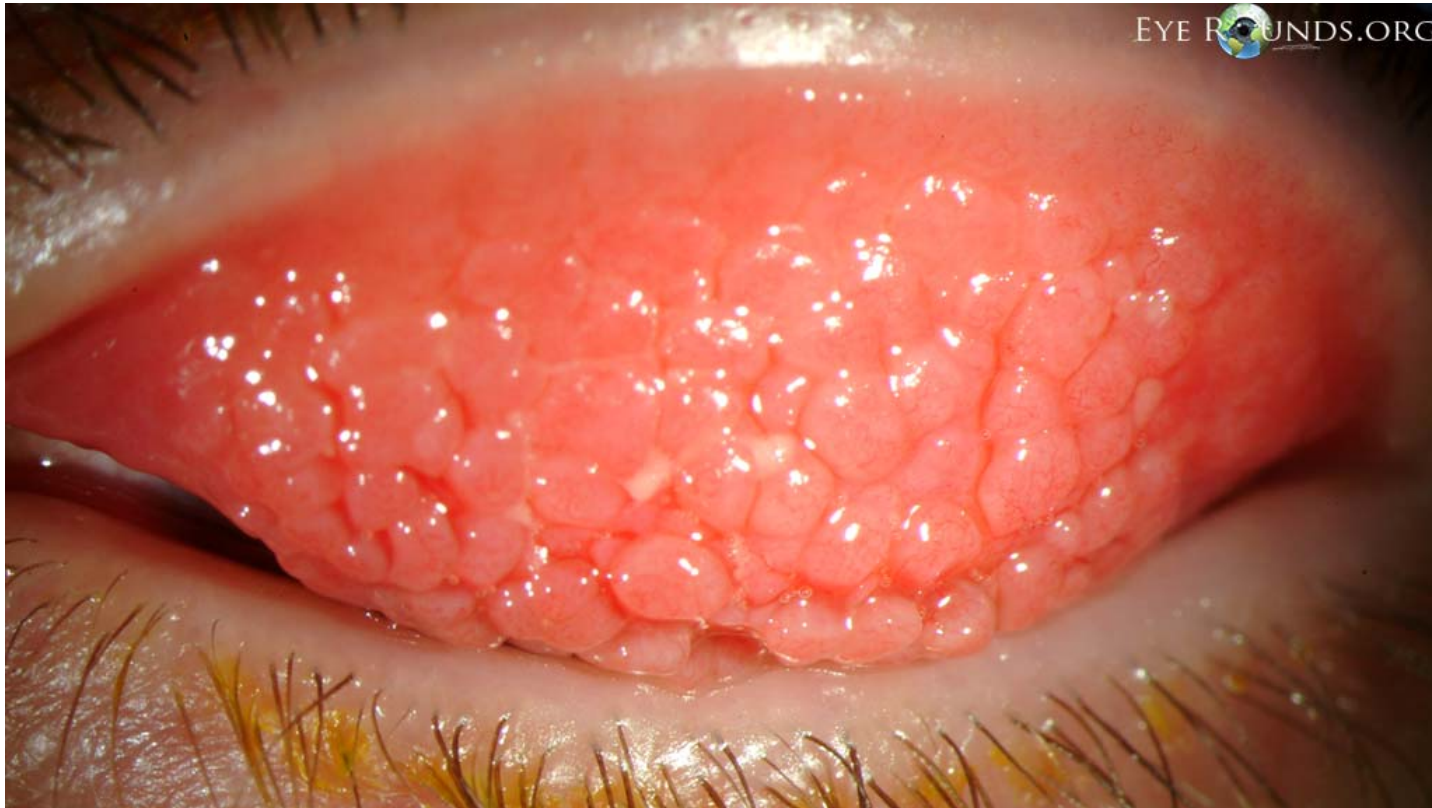
*What word is commonly used to describe the size of papillae in VKC?*

**Giant.** VKC is a cause of so-called *giant papillary conjunctivitis (GPC)*

*What word is commonly used to describe the shape of the papillae in VKC?*

**Cobblestones**

For each of the following, state whether it is associated with *Vernal Keratoconjunctivitis (VKC)*, *Atopic Keratoconjunctivitis (AKC)*, or **Both**



VKC: Giant 'cobblestone' papillae

Q

For each of the following, state whether it is associated with *Vernal Keratoconjunctivitis (VKC)*, *Atopic Keratoconjunctivitis (AKC)*, or **Both**

- *Seasonality: **VKC*** (*vernal* means 'spring'). VKC can be year-round, however.
- *Causes a chronic papillary conjunctivitis: **Both***
- *Somewhat smaller papillae: ~~AKC~~ **VKC***

*What word is commonly used to describe the size of papillae in VKC?*  
**Giant.** VKC is a cause of so-called **giant papillary conjunctivitis** (GPC)

*What word is commonly used to describe the shape of the papillae in VKC?*  
**Cobblestones**

*When you hear 'GPC,' what cause/etiology should come immediately to mind?*

**A** For each of the following, state whether it is associated with *Vernal Keratoconjunctivitis (VKC)*, *Atopic Keratoconjunctivitis (AKC)*, or **Both**

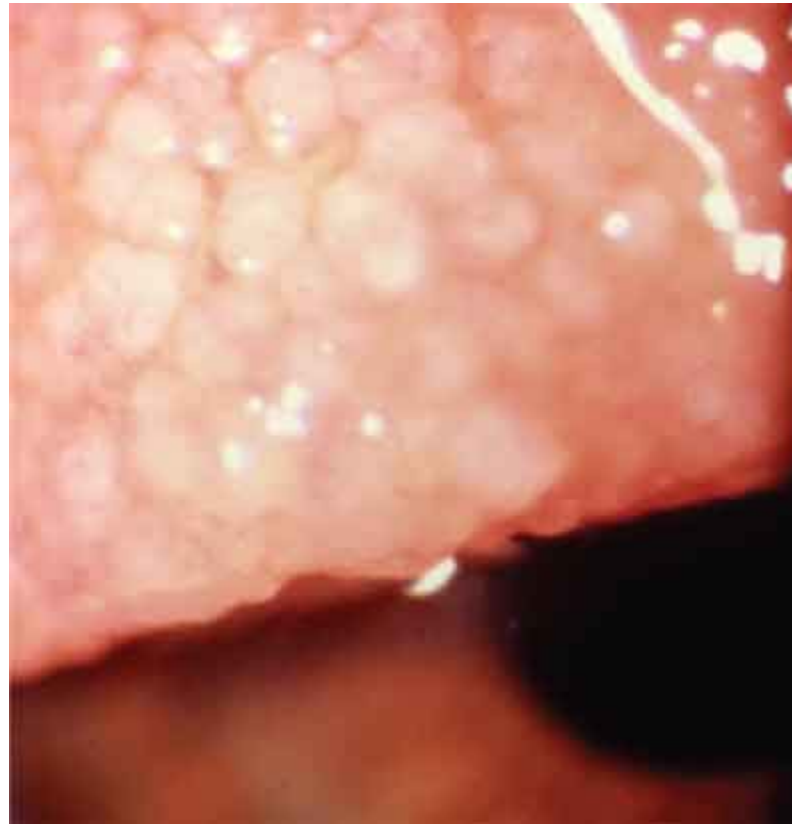
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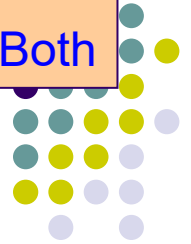
*What word is commonly used to describe the shape of the papillae in VKC?*  
**Cobblestones**

*When you hear 'GPC,' what cause/etiology should come immediately to mind?*  
 Contact-lens wear

For each of the following, state whether it is associated with *Vernal Keratoconjunctivitis (VKC)*, *Atopic Keratoconjunctivitis (AKC)*, or **Both**



CL-induced GPC



**Q** For each of the following, state whether it is associated with *Vernal Keratoconjunctivitis (VKC)*, *Atopic Keratoconjunctivitis (AKC)*, or **Both**

- *Seasonality: **VKC*** (*vernal* means 'spring'). VKC can be year-round, however.
- *Causes a chronic papillary conjunctivitis: **Both***
- *Somewhat smaller papillae: ~~AKC~~ **VKC***

*What word is commonly used to describe the size of papillae in VKC?*  
**Giant.** VKC is a cause of so-called **giant papillary conjunctivitis (GPC)**

*What word is commonly used to describe the shape of the papillae in VKC?*  
**Cobblestones**

*When you hear 'GPC,' what cause/etiology should come immediately to mind?*

**Contact-lens wear**

*Is CL-induced GPC a Type IV hypersensitivity reaction like VKC?*

**A** For each of the following, state whether it is associated with *Vernal Keratoconjunctivitis (VKC)*, *Atopic Keratoconjunctivitis (AKC)*, or **Both**

- *Seasonality: **VKC*** (*vernal* means 'spring'). VKC can be year-round, however.
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- *Somewhat smaller papillae: ~~AKC~~ **VKC***

*What word is commonly used to describe the size of papillae in VKC?*  
**Giant.** VKC is a cause of so-called **giant papillary conjunctivitis (GPC)**

*What word is commonly used to describe the shape of the papillae in VKC?*  
**Cobblestones**

*When you hear 'GPC,' what cause/etiology should come immediately to mind?*

**Contact-lens wear**

*Is CL-induced GPC a Type IV hypersensitivity reaction like VKC?*  
 No, it is an inflammatory response to mechanical trauma/irritation caused by the CL itself



**Q**

For each of the following, state whether it is associated with *Vernal Keratoconjunctivitis (VKC)*, *Atopic Keratoconjunctivitis (AKC)*, or **Both**

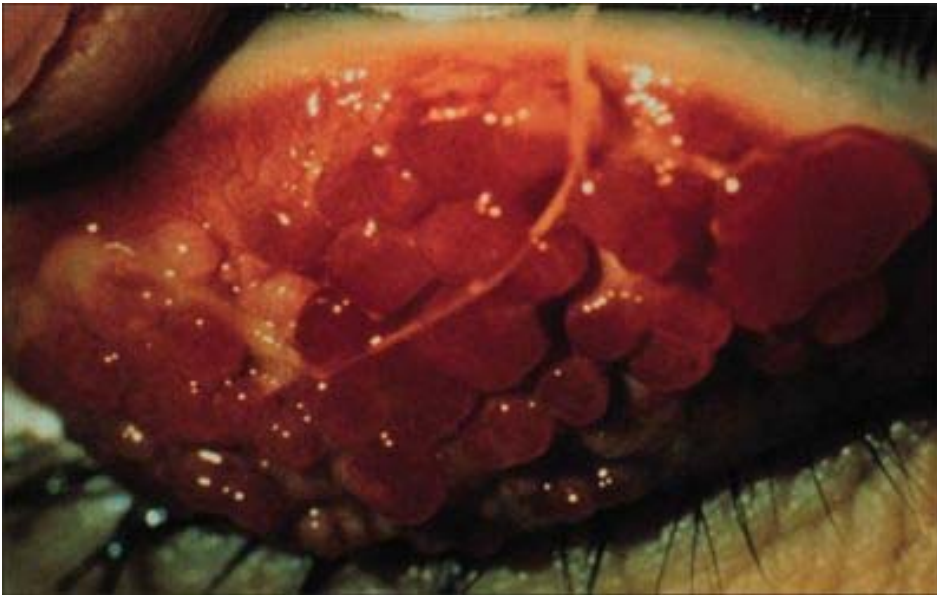
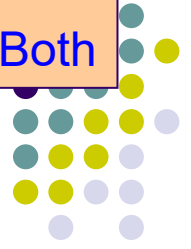
- *Seasonality:* **VKC** (*vernal* means 'spring'). VKC can be year-round, however.
- *Causes a chronic papillary conjunctivitis:* **Both**
- *Somewhat smaller papillae:* **AKC**
- *Associated with thick ropy discharge:*

**A**

For each of the following, state whether it is associated with *Vernal Keratoconjunctivitis (VKC)*, *Atopic Keratoconjunctivitis (AKC)*, or **Both**

- *Seasonality:* **VKC** (*vernal* means 'spring'). VKC can be year-round, however.
- *Causes a chronic papillary conjunctivitis:* **Both**
- *Somewhat smaller papillae:* **AKC**
- *Associated with thick ropy discharge:* **VKC**

For each of the following, state whether it is associated with *Vernal Keratoconjunctivitis (VKC)*, *Atopic Keratoconjunctivitis (AKC)*, or **Both**



VKC: Ropy discharge

**Q**

For each of the following, state whether it is associated with *Vernal Keratoconjunctivitis (VKC)*, *Atopic Keratoconjunctivitis (AKC)*, or **Both**

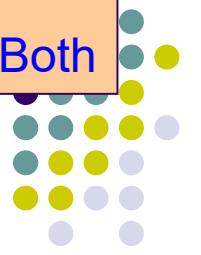
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- *Causes a chronic papillary conjunctivitis:* **Both**
- *Somewhat smaller papillae:* **AKC**
- *Associated with thick ropy discharge:* **VKC**
- *Lower-lid involvement.*

# A

For each of the following, state whether it is associated with *Vernal Keratoconjunctivitis (VKC)*, *Atopic Keratoconjunctivitis (AKC)*, or **Both**

- *Seasonality:* **VKC** (*vernal* means 'spring'). VKC can be year-round, however.
- *Causes a chronic papillary conjunctivitis:* **Both**
- *Somewhat smaller papillae:* **AKC**
- *Associated with thick ropy discharge:* **VKC**
- *Lower-lid involvement:* **AKC**. Lower-lid involvement is rare in VKC.

Whether it is associated with  
*Keratoconjunctivitis (AKC)*, or **Both**



D

AKC



VKC

**Q**

For each of the following, state whether it is associated with *Vernal Keratoconjunctivitis (VKC)*, *Atopic Keratoconjunctivitis (AKC)*, or **Both**

- *Seasonality: **VKC*** (*vernal* means 'spring'). VKC can be year-round, however.
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- *Associated with thick ropy discharge: **VKC***
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*To be clear--is the upper lid involved in AKC?*

**A**

For each of the following, state whether it is associated with *Vernal Keratoconjunctivitis (VKC)*, *Atopic Keratoconjunctivitis (AKC)*, or **Both**

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- *Somewhat smaller papillae:* **AKC**
- *Associated with thick ropy discharge:* **VKC**
- *Lower-lid involvement:* **AKC**. Lower-lid involvement is rare in VKC.

*To be clear--is the upper lid involved in AKC?*

Yes. AKC typically affects both the upper **and** lower lids, whereas VKC typically affects the upper lid only.



**Q**

For each of the following, state whether it is associated with *Vernal Keratoconjunctivitis (VKC)*, *Atopic Keratoconjunctivitis (AKC)*, or **Both**

- *Seasonality:* **VKC** (*vernal* means 'spring'). VKC can be year-round, however.
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- *Lower-lid involvement:* **AKC**. Lower-lid involvement is rare in VKC.
- *Starts before age 10 years:*

**A**

For each of the following, state whether it is associated with *Vernal Keratoconjunctivitis (VKC)*, *Atopic Keratoconjunctivitis (AKC)*, or **Both**

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- *Starts before age 10 years:* **VKC**
- *Associated with a history of atopy:*

**A**

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*(But the association is much stronger with AKC)*

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- *Associated with asthma:*

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- *Starts before age 10 years:* **VKC**
- *Associated with a history of atopy:* **Both**
- *Associated with asthma:* **Both**

*(Again, the association is much stronger with AKC)*

**Q**

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- *Associated with asthma:* **Both**
- *Associated with eczema:*

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- *Starts before age 10 years:* **VKC**
- *Associated with a history of atopy:* **Both**
- *Associated with asthma:* **Both**
- *Associated with eczema:* **Both**

*(On the other hand...Just kidding. Once again, the association is much stronger with AKC)*



**Q**

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- *Associated with asthma: **Both***
- *Associated with eczema: **Both***

*What does the term atopy mean in this context?*

**A**

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*What does the term atopy mean in this context?  
It means 'genetically predisposed to developing allergic diseases'*

**Q**

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*What does the term atopy mean in this context?  
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*What are two classic manifestations of atopy?*

**A**

For each of the following, state whether it is associated with *Vernal Keratoconjunctivitis (VKC)*, *Atopic Keratoconjunctivitis (AKC)*, or **Both**

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*What does the term atopy mean in this context?*  
It means 'genetically predisposed to developing allergic diseases'

*What are two classic manifestations of atopy?*  
Asthma and eczema

**Q**

For each of the following, state whether it is associated with *Vernal Keratoconjunctivitis (VKC)*, *Atopic Keratoconjunctivitis (AKC)*, or **Both**

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*What does the term atopy mean in this context?  
It means 'genetically predisposed to developing allergic diseases'*

*What are two classic manifestations of atopy?  
Asthma and eczema*

*What is the other common name for eczema?*

## A

For each of the following, state whether it is associated with *Vernal Keratoconjunctivitis (VKC)*, *Atopic Keratoconjunctivitis (AKC)*, or **Both**

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*What does the term atopy mean in this context?*  
It means 'genetically predisposed to developing allergic diseases'

*What are two classic manifestations of atopy?*  
Asthma and eczema

*What is the other common name for eczema?*  
Atopic dermatitis

**Q**

For each of the following, state whether it is associated with *Vernal Keratoconjunctivitis (VKC)*, *Atopic Keratoconjunctivitis (AKC)*, or **Both**

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- *Lower-lid involvement:* **AKC**. Lower-lid involvement is rare in VKC.
- *Starts before age 10 years:* **VKC**
- *Associated with a history of atopy:* **Both**
- *Associated with asthma:* **Both**
- *Associated with eczema:* **Both**
- *Clumps of degenerated eosinophils and epithelial cells at limbus:*

**A**

For each of the following, state whether it is associated with *Vernal Keratoconjunctivitis (VKC)*, *Atopic Keratoconjunctivitis (AKC)*, or **Both**

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- *Clumps of degenerated eosinophils and epithelial cells at limbus:* **VKC**



**Q**

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- *Associated with asthma: **Both***
- *Associated with eczema: **Both***
- *Clumps of degenerated eosinophils and epithelial cells at limbus: **VKC***

*'Clumps of degenerated eos/epi cells at limbus'—what eponymous VKC finding is this referring to?*

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- *Clumps of degenerated eosinophils and epithelial cells at limbus: **VKC***

*'Clumps of degenerated eos/epi cells at limbus'—what eponymous VKC finding is this referring to?*

Horner-Trantas dots

For each of the following, state whether it is associated with *Vernal Keratoconjunctivitis (VKC)*, *Atopic Keratoconjunctivitis (AKC)*, or **Both**



VKC: Horner-Trantas dots

**Q**

For each of the following, state whether it is associated with *Vernal Keratoconjunctivitis (VKC)*, *Atopic Keratoconjunctivitis (AKC)*, or **Both**

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- *Lower-lid involvement: AKC*. Lower-lid involvement is rare in VKC.
- *Starts before age 10 years: VKC*
- *Associated with a history of atopy: Both*
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- *Associated with eczema: Both*
- *Clumps of degenerated eosinophils and epithelial cells at limbus: VKC*

*'Clumps of degenerated eos/epi cells at limbus'—what eponymous VKC finding is this referring to?*

*Horner-Trantas dots*

*Do Horner-Trantas dots occur in AKC?*

## A

For each of the following, state whether it is associated with *Vernal Keratoconjunctivitis (VKC)*, *Atopic Keratoconjunctivitis (AKC)*, or **Both**

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- *Associated with asthma: Both*
- *Associated with eczema: Both*
- *Clumps of degenerated eosinophils and epithelial cells at limbus: VKC*

*'Clumps of degenerated eos/epi cells at limbus'—what eponymous VKC finding is this referring to?*

Horner-Trantas dots

*Do Horner-Trantas dots occur in AKC?*

Yes, but they are uncommon

For each of the following, state whether it is associated with *Vernal Keratoconjunctivitis (VKC)*, *Atopic Keratoconjunctivitis (AKC)*, or **Both**

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- *Somewhat smaller papillae: **AKC***
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- *Lower-lid involvement: **AKC***. Lower-lid involvement is rare in VKC.
- *Starts before age 10 years: **VKC***

*In essence, Horner-Trantas dots are simply papillae that happen to be located at the limbus*

- *Associated with eczema: **Both***
- *Clumps of degenerated eosinophils and epithelial cells at limbus: **VKC***

*'Clumps of degenerated eos/epi cells at limbus'—what eponymous VKC finding is this referring to?*

**Horner-Trantas dots**

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**Q**

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- *Clumps of degenerated eosinophils and epithelial cells at limbus:* **VKC**
- *Symblepharon formation:*

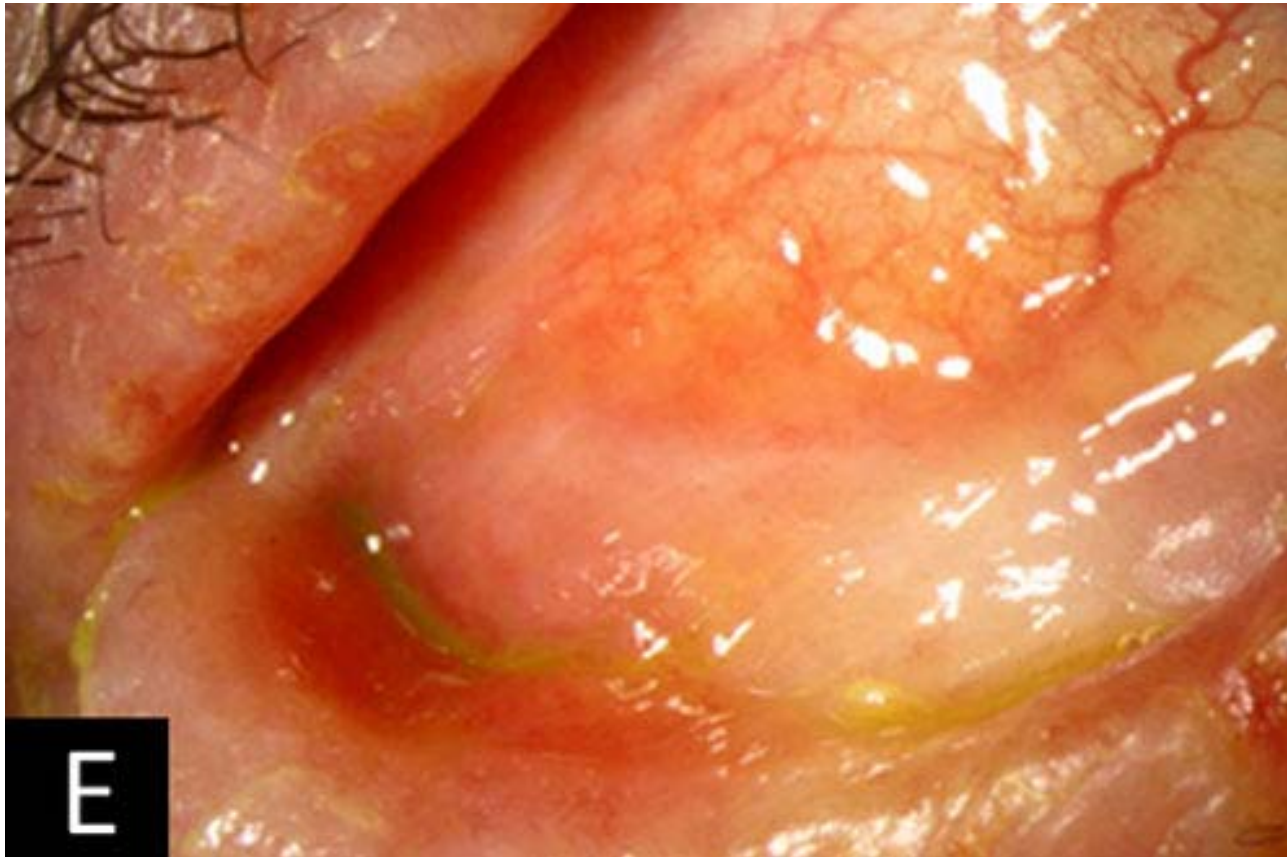
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AKC: Symblephara

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- *Associated with keratoconus:*

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- *Corneal vascularization common:*

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AKC: Corneal neovascularization



Q

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- *Corneal vascularization common:* **AKC**
- *Usually worse in the morning:*

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*What two-word alliterative term is used to capture the AM burden associated with VKC?*

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*What two-word alliterative term is used to capture the AM burden associated with VKC?*

*'Morning misery.'* VKC is often so bad upon awakening that the child is unable to go to school.

Q

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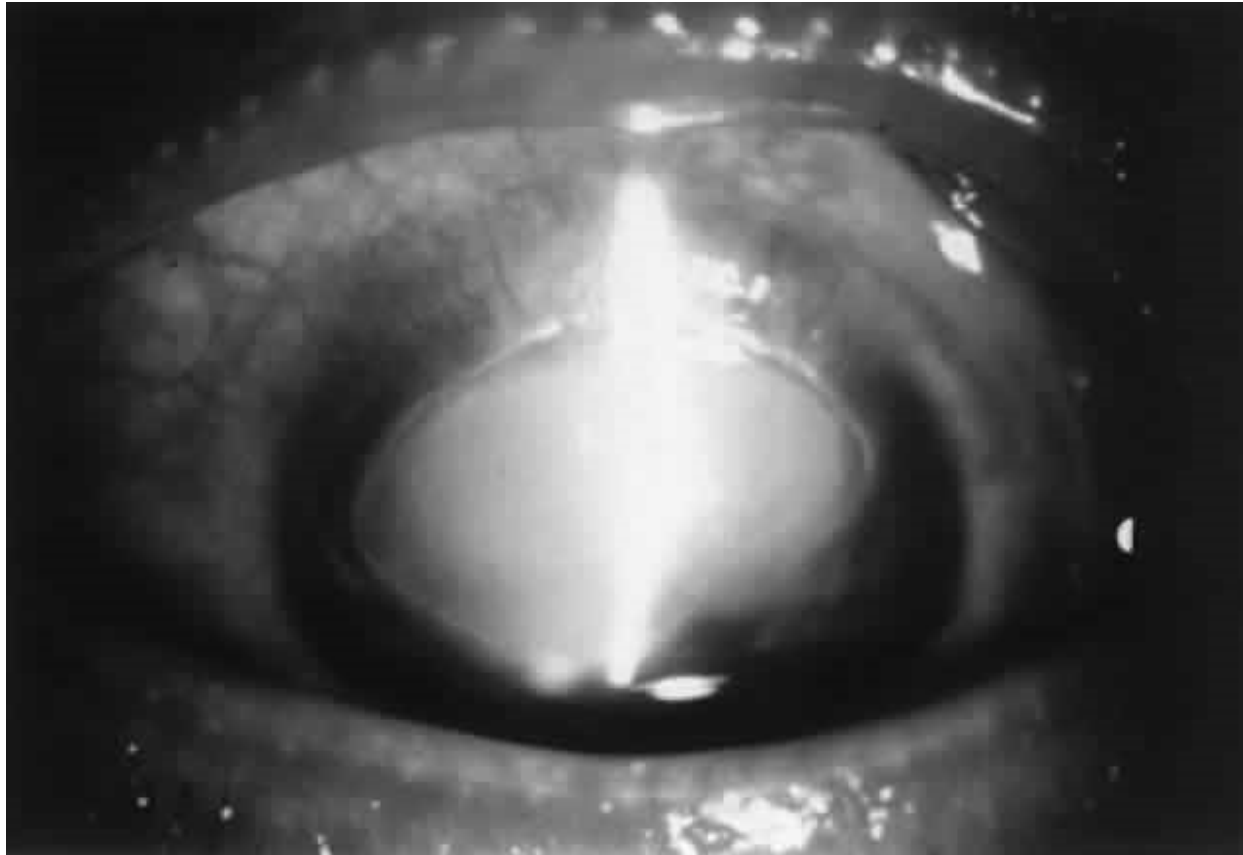
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- *Associated with so-called shield ulcers of the cornea:*

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VKC: Shield ulcer





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- *Indeed they do*
- 
- 
- 
- 
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- *Indeed they do*
- *How do the epithelial staining patterns differ among VKC, AKC and dry-eye syndrome?*
- *--In VKC, staining is usually found in the...*
- *--In AKC, staining is usually found in the...*
- *--In DES, staining is usually found in the...*
- *Associated with **keratoconus**: **Both***. The association may stem from the aggressive eye-rubbing that VKC/AKC sufferers engage in.
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- *--In DES, staining is usually found in the...interpalpebral cornea (aka the 'exposure zone')* VKC.
- *Associated with **keratoconus**: **Both***. The association may stem from the aggressive eye-rubbing that VKC/AKC sufferers engage in.
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TL;DR: In VKC and AKC, the cornea stains **beneath** the lid that is experiencing inflammation; in DES, the cornea that stains is that which experiences chronic evaporation, ie, **between** the lids

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- *Associated with so-called shield ulcers of the cornea:* **VKC**
- *Associated with cataract formation:*

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- ***What sort of cataracts occur in AKC?***
- *Associated with so-called shield ulcers of the cornea: **VKC***
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- *What sort of cataracts occur in AKC?*  
Subcapsular (either posterior or anterior)
- *C*
- *U*
- *Associated with so-called shield ulcers of the cornea: **VKC***
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Q

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Subcapsular (either posterior or anterior)
- *Under what circumstance might a VKC pt develop a cataract?*
- *Associated with so-called shield ulcers of the cornea: **VKC***
- *Associated with cataract formation: ~~AKC~~ **VKC***

Q/A

For each of the following, state whether it is associated with *Vernal Keratoconjunctivitis (VKC)*, *Atopic Keratoconjunctivitis (AKC)*, or **Both**

- *Seasonality: **VKC*** (vernal means 'spring'). VKC can be year-round, however.
- *Causes a chronic papillary conjunctivitis: **Both***
- *Somewhat smaller papillae: **AKC***
- *Associated with thick ropy discharge: **VKC***
- *Lower-lid involvement: **AKC***. Lower-lid involvement is rare in VKC.
- *Starts before age 10 years: **VKC***
- *Associated with a history of atopy: **Both***
- *Associated with asthma: **Both***
- *Associated with eczema: **Both***
- *Clumps of degenerated eosinophils and epithelial cells at limbus: **VKC***
- *Symblepharon formation: **AKC***. Symblephara are much less common in VKC.
- *What sort of cataracts occur in AKC?*  
Subcapsular (either posterior or anterior)
- *Under what circumstance might a VKC pt develop a cataract?*  
If management has been heavily reliant upon [redacted]
- *Associated with so-called shield ulcers of the cornea. **VKC***
- *Associated with cataract formation: ~~AKC~~ **VKC***

## A

For each of the following, state whether it is associated with *Vernal Keratoconjunctivitis (VKC)*, *Atopic Keratoconjunctivitis (AKC)*, or **Both**

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- *Clumps of degenerated eosinophils and epithelial cells at limbus: **VKC***
- *Symblepharon formation: **AKC***. Symblephara are much less common in VKC.
- *What sort of cataracts occur in AKC? **Subcapsular (either posterior or anterior)***
- *Under what circumstance might a VKC pt develop a cataract? **If management has been heavily reliant upon topical steroid use***
- *Associated with so-called shield ulcers of the cornea: **VKC***
- *Associated with cataract formation: ~~AKC~~ **VKC***

Q

For each of the following, state whether it is associated with *Vernal Keratoconjunctivitis (VKC)*, *Atopic Keratoconjunctivitis (AKC)*, or **Both**

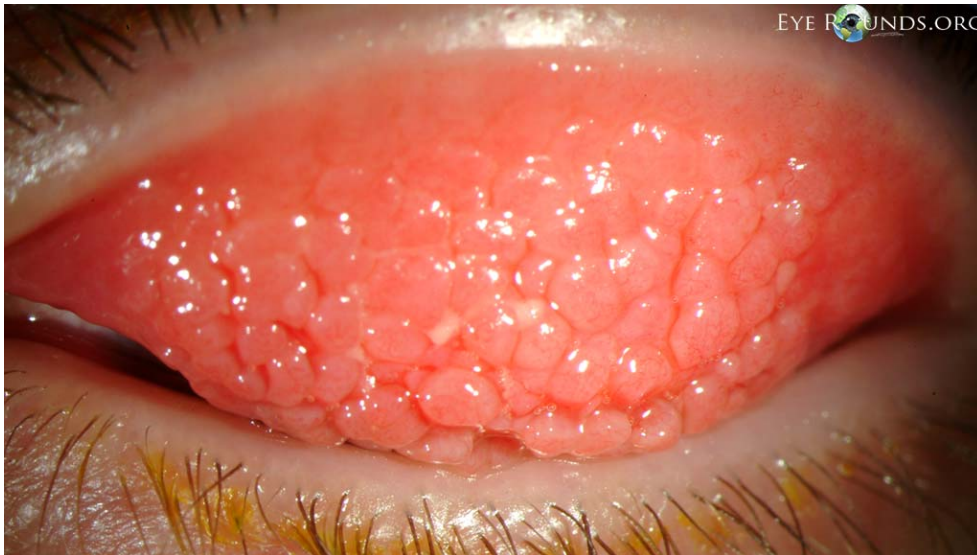
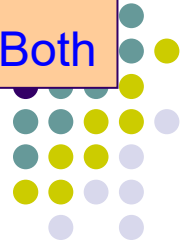
- *Seasonality:* **VKC** (*vernal* means 'spring'). VKC can be year-round, however.
- *Causes a chronic papillary conjunctivitis:* **Both**
- *Somewhat smaller papillae:* **AKC**
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- *Starts before age 10 years:* **VKC**
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- *Associated with eczema:* **Both**
- *Clumps of degenerated eosinophils and epithelial cells at limbus:* **VKC**
- *Symblepharon formation:* **AKC**. Symblephara are much less common in VKC.
- *Associated with keratoconus:* **Both**. The association may stem from the aggressive eye-rubbing that VKC/AKC sufferers engage in.
- *Corneal vascularization common:* **AKC**
- *Usually worse in the morning:* **VKC**
- *Associated with so-called shield ulcers of the cornea:* **VKC**
- *Associated with cataract formation:* **AKC**
- *Palpebral and limbal forms:*

**A**

For each of the following, state whether it is associated with *Vernal Keratoconjunctivitis (VKC)*, *Atopic Keratoconjunctivitis (AKC)*, or **Both**

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- *Associated with cataract formation:* **AKC**
- *Palpebral and limbal forms:* **VKC**

For each of the following, state whether it is associated with *Vernal Keratoconjunctivitis (VKC)*, *Atopic Keratoconjunctivitis (AKC)*, or **Both**



VKC: Palpebral form



VKC: Limbal form

**Q** For each of the following, state whether it is associated with *Vernal Keratoconjunctivitis (VKC)*, *Atopic Keratoconjunctivitis (AKC)*, or **Both**

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- *Clumps of degenerated eosinophils and epithelial cells at limbus: **VKC***
- *Symblyon formation: **AKC***. Symblyons are much less common in VKC.
- *Can the palpebral and limbal forms present simultaneously?*
- 
- 
- 
- 
- 
- *Palpebral and limbal forms: **VKC***

## A

For each of the following, state whether it is associated with *Vernal Keratoconjunctivitis (VKC)*, *Atopic Keratoconjunctivitis (AKC)*, or **Both**

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- *Clumps of degenerated eosinophils and epithelial cells at limbus: **VKC***
- *Symblyon formation: **AKC***. Symblyons are much less common in VKC.
- *Can the palpebral and limbal forms present simultaneously?*
- **Yes**
- 
- 
- 
- 
- 
- *Palpebral and limbal forms: **VKC***



Q

For each of the following, state whether it is associated with *Vernal Keratoconjunctivitis (VKC)*, *Atopic Keratoconjunctivitis (AKC)*, or **Both**

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- *Clumps of degenerated eosinophils and epithelial cells at limbus: **VKC***
- *Symblyon formation: **AKC***. Symblyons are much less common in VKC.
- *Can the palpebral and limbal forms present simultaneously?*
- *Yes*
- *Demographically speaking, what sort of pt is more likely to have the limbal form?*
- *Palpebral and limbal forms: **VKC***

## A

For each of the following, state whether it is associated with *Vernal Keratoconjunctivitis (VKC)*, *Atopic Keratoconjunctivitis (AKC)*, or **Both**

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- *Clumps of degenerated eosinophils and epithelial cells at limbus: **VKC***
- *Symblyon formation: **AKC***. Symblyons are much less common in VKC.
- *Can the palpebral and limbal forms present simultaneously?*
- *Yes*
- *Demographically speaking, what sort of pt is more likely to have the limbal form?*
- *Those with more heavily pigmented skin (eg, black; Mediterranean, Asian descent)*
- *Palpebral and limbal forms: **VKC***

**Q**

For each of the following, state whether it is associated with *Vernal Keratoconjunctivitis (VKC)*, *Atopic Keratoconjunctivitis (AKC)*, or **Both**

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- *Symblepharon formation:* **AKC**. Symblephara are much less common in VKC.
- *Associated with keratoconus:* **Both**. The association may stem from the aggressive eye-rubbing that VKC/AKC sufferers engage in.
- *Corneal vascularization common:* **AKC**
- *Usually worse in the morning:* **VKC**
- *Associated with so-called shield ulcers of the cornea:* **VKC**
- *Associated with cataract formation:* **AKC**
- *Palpebral and limbal forms:* **VKC**
- *Resolves in second decade:*

## A

For each of the following, state whether it is associated with *Vernal Keratoconjunctivitis (VKC)*, *Atopic Keratoconjunctivitis (AKC)*, or **Both**

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- *Associated with cataract formation:* **AKC**
- *Palpebral and limbal forms:* **VKC**
- *Resolves in second decade:* **VKC**. This is a disease of children.

## A

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- *Usually worse in the morning:* **VKC**
- *Associated with so-called shield ulcers of the cornea:* **VKC**
- *Associated with cataract formation:* **AKC**
- *Palpebral and limbal forms:* **VKC**
- *Resolves in second decade:* **VKC**. This is a disease of children. In contrast, AKC often continues to progress through adulthood.