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

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

- **Seasonality:** VKC (vernial means ‘spring’). VKC can be **year-round**, however.

**Year-round VKC is associated with what sort of climate?**
- Tropical
For each of the following, state whether it is associated with Vernal Keratoconjunctivitis (VKC), Atopic Keratoconjunctivitis (AKC), or Both

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

   One form of allergic conjunctivitis is seasonal in nature. What is it called?
One form of allergic conjunctivitis is seasonal in nature. What is it called?
It is called ‘seasonal allergic conjunctivitis’ (SAC)
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?
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.
For each of the following, state whether it is associated with \textit{Vernal Keratoconjunctivitis (VKC)} (\textit{AKC}), \textit{Atopic Keratoconjunctivitis (AKC)}, or \textit{Both}.

- **Seasonality**: VKC (\textit{vernal} means ‘spring’). VKC can be year-round, however.

\textbf{One form of allergic conjunctivitis is seasonal in nature. What is it called?}
It is called \textbf{\textit{seasonal allergic conjunctivitis}} (SAC)

\textbf{Just as VKC and AKC are closely related, SAC has a ‘partner in crime’ as well. What is this closely-related condition?}

- Type \textbf{IV}
- Type \textbf{I}
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)
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).

  Is PAC seasonal?
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)*

  *Is PAC seasonal?*
  *No (note that in this context, perennial means ‘year round’)*
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
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
Speaking of hypersensitivity reactions…

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

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

<table>
<thead>
<tr>
<th>Type I</th>
<th>Type II</th>
<th>Type III</th>
<th>Type IV</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

For each of the following, state whether it is associated with *Vernal Keratoconjunctivitis* (VKC), *Atopic Keratoconjunctivitis* (AKC), or *Both*
<table>
<thead>
<tr>
<th>Type I</th>
<th>Type II</th>
<th>Type III</th>
<th>Type IV</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Type I reactions involve...</strong> [One word that captures the nature of this rxn]</td>
<td><strong>Type II reactions involve...</strong></td>
<td><strong>Type III reactions involve...</strong></td>
<td><strong>Type IV reactions involve...</strong></td>
</tr>
</tbody>
</table>

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

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

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

### Anaphylaxis

<table>
<thead>
<tr>
<th>Type I</th>
<th>Type II</th>
<th>Type III</th>
<th>Type IV</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Type I reactions involve...</strong> Anaphylaxis</td>
<td><strong>Type II reactions involve...</strong></td>
<td><strong>Type III reactions involve...</strong></td>
<td><strong>Type IV reactions involve...</strong></td>
</tr>
</tbody>
</table>

**Speaking of hypersensitivity reactions…**

**How many types of ocular-surface hypersensitivity reactions are there?**
For each of the following, state whether it is associated with *Vernal Keratoconjunctivitis (VKC)*, *Atopic Keratoconjunctivitis (AKC)*, or Both:

<table>
<thead>
<tr>
<th>Question</th>
<th>VKC</th>
<th>AKC</th>
<th>Both</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anaphylaxis</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Type I reactions involve...</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Type II reactions involve...</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Type III reactions involve...</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Type IV reactions involve...</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Anaphylaxis</td>
<td>Cytotoxic Ab</td>
<td></td>
<td></td>
</tr>
<tr>
<td>------------</td>
<td>-------------</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Type I</strong></td>
<td><strong>Type II</strong></td>
<td><strong>Type III</strong></td>
<td><strong>Type IV</strong></td>
</tr>
</tbody>
</table>

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

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

<table>
<thead>
<tr>
<th>Anaphylaxis</th>
<th>Cytotoxic Ab</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Type I</strong></td>
<td><strong>Type II</strong></td>
</tr>
</tbody>
</table>

*Type I reactions involve...* Anaphylaxis
*Type II reactions involve...* Cytotoxic antibodies
*Type III reactions involve...* [Three words for this one]
*Type IV reactions involve...*
For each of the following, state whether it is associated with Vernal Keratoconjunctivitis (VKC), Atopic Keratoconjunctivitis (AKC), or Both

<table>
<thead>
<tr>
<th>Type</th>
<th>Anaphylaxis</th>
<th>Cytotoxic Ab</th>
<th>Immune-complex reactions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type I</td>
<td></td>
<td>Type II</td>
<td>Type III</td>
</tr>
<tr>
<td>Type II</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Type I reactions involve...Anaphylaxis
Type II reactions involve...Cytotoxic antibodies
Type III reactions involve...Immune-complex reactions
Type IV reactions involve...
<table>
<thead>
<tr>
<th>Reaction</th>
<th>Type I</th>
<th>Type II</th>
<th>Type III</th>
<th>Type IV</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anaphylaxis</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cytotoxic Ab</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Immune-complex</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>reactions</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Type I reactions involve...</th>
<th>Type II reactions involve...</th>
<th>Type III reactions involve...</th>
<th>Type IV reactions involve...</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anaphylaxis</td>
<td>Cytotoxic antibodies</td>
<td>Immune-complex reactions</td>
<td>Cell-mediated reactions</td>
</tr>
<tr>
<td><strong>Type I</strong></td>
<td><strong>Type II</strong></td>
<td><strong>Type III</strong></td>
<td><strong>Type IV</strong></td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Type I</th>
<th>Type II</th>
<th>Type III</th>
<th>Cell-mediated reactions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anaphylaxis</td>
<td>Cytotoxic Ab</td>
<td>Immune-complex reactions</td>
<td>Type IV</td>
</tr>
</tbody>
</table>

*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?
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

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

‘Cell-mediated reaction’…Which sort of immune cell is doing the mediating?
T-helper cells
**Q**

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

<table>
<thead>
<tr>
<th>Type I</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Anaphylaxis</td>
<td>Cytotoxic Ab</td>
<td>Immune-complex reactions</td>
<td>Cell-mediated reactions</td>
</tr>
</tbody>
</table>

**‘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?**
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

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.
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

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?
Type I reactions involve...

Type II reactions involve...

Type III reactions involve...

Type IV reactions involve...

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?
24-72 hours, which is why this reaction is often referred to as delayed hypersensitivity.
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 are they mediating?
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.
‘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?
24-72 hours, which is why this reaction is often referred to as delayed hypersensitivity.

Note that if you remember Type IV as ‘delayed hypersensitivity’…the four forms can be remembered with the mnemonic ACID

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

<table>
<thead>
<tr>
<th>Anaphylaxis</th>
<th>Cytotoxic Ab</th>
<th>Immune-complex reactions</th>
<th>Cell-mediated reactions</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Type I</strong></td>
<td><strong>Type II</strong></td>
<td><strong>Type III</strong></td>
<td><strong>Type IV</strong></td>
</tr>
</tbody>
</table>

Type I reactions involve...Anaphylaxis
Type II reactions involve...Cytotoxic antibodies
Type III reactions involve...Immune-complex reactions
Type IV reactions involve...Delayed hypersensitivity
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)?**
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)?
Type I
For each of the following, state whether it is associated with **Vernal Keratoconjunctivitis (VKC)**, **Atopic Keratoconjunctivitis (AKC)**, or **Both**

**Type I**

- **Anaphylaxis**

**Type II**

- Cytotoxic Ab

**Type III**

- Immune-complex reactions

**Type IV**

- Cell-mediated reactions

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

<table>
<thead>
<tr>
<th>Anaphylaxis</th>
<th>Cytotoxic Ab</th>
<th>Immune-complex reactions</th>
<th>Cell-mediated reactions</th>
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<td></td>
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</tbody>
</table>

**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 [one word, + its abb.] to [Ig... cell type] receptors on [one word] causes the cells to...
Briefly, how does an anaphylactic reaction proceed?
The binding of antigen (Ag) to IgE receptors on mast cells causes the cells to degranulate.
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 and other pre-formed inflammatory mediators.
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.
For each of the following, state whether it is associated with Vernal Keratoconjunctivitis (VKC), Atopic Keratoconjunctivitis (AKC), or Both

Anaphylaxis

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?
Anaphylaxis
Type I

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 this reaction is often referred to as immediate hypersensitivity).
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 this reaction is often referred to as immediate hypersensitivity)

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

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.

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

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</table>

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 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*

- **Seasonality:** **VKC** (*vernal* means ‘spring’). VKC can be year-round, however.
- **Causes a chronic papillary conjunctivitis:**
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*
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**: **Both**
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
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?
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).*
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?
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**
For each of the following, state whether it is associated with
Vernal Keratoconjunctivitis (VKC), Atopic Keratoconjunctivitis (AKC), or Both

VKC: Giant ‘cobblestone’ papillae
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

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

CL-induced GPC
For each of the following, state whether it is associated with Vernal Keratoconjunctivitis (VKC), Atopic Keratoconjunctivitis (AKC), or Both.

- **Seasonality**: VKC (vernial 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?**
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?**
- No, it is an inflammatory response to mechanical trauma/irritation caused by the CL itself
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:**
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For each of the following, state whether it is associated with Vernal Keratoconjunctivitis (VKC), Atopic Keratoconjunctivitis (AKC), or Both:

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

AKC

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

- **Seasonality:** VKC (vernial 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.

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

*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.
### 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**
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- **Lower-lid involvement:** **AKC**. Lower-lid involvement is rare in VKC.
- **Starts before age 10 years:**
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
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- **Associated with thick ropy discharge**: VKC
- **Lower-lid involvement**: AKC. Lower-lid involvement is rare in VKC.
- **Starts before age 10 years**: VKC
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**
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

*(But the association is much stronger with AKC)*
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:** **Both**
- **Associated with asthma:**
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
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- **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

*(Again, the association is much stronger with AKC)*
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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- **Starts before age 10 years**: VKC
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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)*
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 a history of atopy**: Both
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- **Associated with eczema**: Both

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

- **Seasonality**: VKC (vernial 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

What does the term atopy mean in this context? It means ‘genetically predisposed to developing allergic diseases’
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?**
For each of the following, state whether it is associated with *Vernal Keratoconjunctivitis (VKC)*, *Atopic Keratoconjunctivitis (AKC)*, or *Both*:

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What are two classic manifestations of atopy? Asthma and eczema
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Asthma and 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
- **Clumps of degenerated eosinophils and epithelial cells at limbus:**
For each of the following, state whether it is associated with 
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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?
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 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**
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?
For each of the following, state whether it is associated with 
Vernal Keratoconjunctivitis (VKC), Atopic Keratoconjunctivitis (AKC), or Both

- **Seasonality:** VKC (vernial means ‘spring’). VKC can be year-round, however.
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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

_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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- **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

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*

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

AKC: Symblephara
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
- **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.
- **Associated with keratoconus:**
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**
- **Associated with thick ropy discharge:** **VKC**
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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**
- **Clumps of degenerated eosinophils and epithelial cells at limbus:** **VKC**
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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.

Associated with keratoconus: **Both**. The association may stem from the behavior that VKC/AKC sufferers engage in.
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.
- **Associated with keratoconus**: **Both**. The association may stem from the aggressive eye-rubbing that VKC/AKC sufferers engage in.
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.
- **Associated with keratoconus**: **Both**. The association may stem from the aggressive eye-rubbing that VKC/AKC sufferers engage in.
- **Corneal vascularization common**:
For each of the following, state whether it is associated with Vernal Keratoconjunctivitis (VKC), Atopic Keratoconjunctivitis (AKC), or Both:

- **Seasonality**: VKC (*vernalis* 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
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- **Associated with keratoconus**: Both. The association may stem from the aggressive eye-rubbing that VKC/AKC sufferers engage in.
- **Corneal vascularization common**: AKC
For each of the following, state whether it is associated with *Vernal Keratoconjunctivitis (VKC), Atopic Keratoconjunctivitis (AKC), or Both*.

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

- **Seasonality**: VKC (vernial 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.
- **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**: 
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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- **Corneal vascularization common:** **AKC**
- **Usually worse in the morning:** **VKC**

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

For each of the following, state whether it is associated with 
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- **Corneal vascularization common**: **AKC**
- **Usually worse in the morning**: **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.
For each of the following, state whether it is associated with **Vernal Keratoconjunctivitis (VKC)**, **Atopic Keratoconjunctivitis (AKC)**, or **Both**

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- **Corneal vascularization common:** **AKC**
- **Usually worse in the morning:** **VKC**
- **Associated with so-called shield ulcers of the cornea:**
For each of the following, state whether it is associated with Vernal Keratoconjunctivitis (VKC), Atopic Keratoconjunctivitis (AKC), or Both:

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- Corneal vascularization common: **AKC**
- Usually worse in the morning: **VKC**
- Associated with so-called shield ulcers of the cornea: **VKC**
For each of the following, state whether it is associated with *Vernal Keratoconjunctivitis (VKC)*, *Atopic Keratoconjunctivitis (AKC)*, or *Both*.

VKC: Shield ulcer
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.
- **Speaking of the cornea…Do VKC and AKC pts manifest punctate epithelial erosions with subsequent epithelial staining?**
- **Associated with keratoconus**: Both. The association may stem from the aggressive eye-rubbing that VKC/AKC sufferers engage in.
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  - Indeed they do
- **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
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For each of the following, state whether it is associated with 
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- **Speaking of the cornea…Do VKC and AKC pts manifest punctate epithelial erosions with subsequent epithelial staining?**
  - 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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How do the epithelial staining patterns differ among VKC, AKC and dry-eye syndrome?
- In VKC, staining is usually found in the…superior cornea
- In AKC, staining is usually found in the…superior cornea, and possibly the inferior as well
- In DES, staining is usually found in the…interpupillary cornea (aka the ‘exposure zone’)

- **Associated with keratoconus**: Both. The association may stem from the aggressive eye-rubbing that VKC/AKC sufferers engage in.
- **Corneal vascularization common**: AKC
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  - **Associated with so-called shield ulcers of the cornea**: VKC

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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.

**How do the epithelial staining patterns differ among VKC, AKC and dry-eye syndrome?**
- In VKC, staining is usually found in the…superior cornea
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**Speaking of the cornea…** Do VKC and AKC pts manifest punctate epithelial erosions with subsequent epithelial staining?

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

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

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- **Corneal vascularization common:** AKC
- **Usually worse in the morning:** VKC
- **Associated with so-called shield ulcers of the cornea:** VKC
- **Associated with cataract formation:**
### 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 a history of atopy:** **Both**
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- **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**
For each of the following, state whether it is associated with

**Vernal Keratoconjunctivitis (VKC), Atopic Keratoconjunctivitis (AKC), or Both**

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- **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

**What sort of cataracts occur in AKC?**
For each of the following, state whether it is associated with 
**Vernal Keratoconjunctivitis (VKC)**, **Atopic Keratoconjunctivitis (AKC)**, or **Both**

- **Seasonality:** VKC (vernial means ‘spring’). VKC can be year-round, however.
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- **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

**What sort of cataracts occur in AKC?**
Subcapsular (either posterior or anterior)
For each of the following, state whether it is associated with Vernal Keratoconjunctivitis (VKC), Atopic Keratoconjunctivitis (AKC), or Both:

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- **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

**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.
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 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** and **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.
A

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

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- **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/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
For each of the following, state whether it is associated with 
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- **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:**
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**
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.
- **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

**Can the palpebral and limbal forms present simultaneously?**

- **Palpebral and limbal forms**: VKC
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.
- **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

**Can the palpebral and limbal forms present simultaneously?**
Yes

- **Palpebral and limbal forms**: VKC
For each of the following, state whether it is associated with **Vernal Keratoconjunctivitis (VKC)**, **Atopic Keratoconjunctivitis (AKC)**, or **Both**

- **Seasonality**: **VKC** (vernial 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.
- **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**

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

- **Seasonality:** VKC (vernral 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. Symblepharae 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

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

- **Seasonality:** VKC \(\text{(vernai means 'spring')}\). 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.
- **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:** VKC. This is a disease of children.
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
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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
- **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:** VKC
- **Resolves in second decade:** VKC. *This is a disease of children.* In contrast, AKC often continues to progress through adulthood.