Corneal Dystrophies

What are the four categories of corneal dystrophies?
Corneal Dystrophies

Epithelial and Subepithelial Dystrophies

Epithelial-Stromal TGFBI Dystrophies

What are the four categories of corneal dystrophies?

Stromal Dystrophies

Endothelial Dystrophies
Corneal Dystrophies

Epithelial and Subepithelial Dystrophies

Epithelial- Stromal *TGFBI* Dystrophies

1) ?
2) ?
3) ?
4) ?
5) ?
6) ?

What are the six epithelial-stromal *TGFBI* corneal dystrophies?

Stromal Dystrophies

Endothelial Dystrophies
Epithelial and Subepithelial Dystrophies

Epithelial-Stromal TGFBI Dystrophies
1) Reis-Bücklers corneal dystrophy
2) Thiel-Behnke corneal dystrophy
3) Lattice, type 1
4) Lattice, variant types (III, IIIA, I/IIIA, IV)
5) Granular type 1
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Stromal Dystrophies

Endothelial Dystrophies

What are the six epithelial-stromal TGFBI corneal dystrophies?
Corneal Dystrophies

Epithelial and Subepithelial Dystrophies

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Stromal Dystrophies
1) ?
2) ?
3) ?
4) ?
5) ?
6) ?

Endothelial Dystrophies

What are the six non-TGFBI stromal dystrophies?
Corneal Dystrophies

Epithelial and Subepithelial Dystrophies

Epithelial-Stromal $TGFBI$ Dystrophies
1) Reis-Bücklers corneal dystrophy
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4) Lattice, variant types (III, IIIA, I/IIIA, IV)
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What are the six non-$TGFBI$ stromal dystrophies?

Stromal Dystrophies
1) Macular corneal dystrophy
2) Schnyder corneal dystrophy
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5) Posterior amorphous corneal dystrophy
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Endothelial Dystrophies
Stromal Dystrophies

1) Macular corneal dystrophy
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Which stromal dystrophies does the BCSC Cornea book consider the ‘classic 3’?
Epithelial and Subepithelial Dystrophies

Epithelial-Stromal \textit{TGFBI} Dystrophies
1) Reis-Bücklers corneal dystrophy
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3) \textbf{Lattice, type 1}
4) Lattice, variant types (III, II/IIA, I/IIIA, IV)
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\textbf{Stromal Dystrophies}
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\textbf{Endothelial Dystrophies}

\textit{Which stromal dystrophies does the BCSC Cornea book consider the ‘classic 3’?}
Corneal Dystrophies

Epithelial and Subepithelial Dystrophies

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Endothelial Dystrophies

What is the well-known mnemonic regarding the classic 3?
Corneal Dystrophies

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What is the well-known mnemonic regarding the classic 3?

\textbf{Marilyn Monroe Always Gets Her Man in LA County}

Endothelial Dystrophies
Endothelial Dystrophies

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What is the well-known mnemonic regarding the classic 3?

Marilyn Monroe Always Gets Her Man in LA County

What does the mnemonic help us to remember?
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What is the well-known mnemonic regarding the classic 3?

**Marilyn Monroe Always Gets Her Man in LA County**

What does the mnemonic help us to remember?
The name, abnormal material, and stain for each of the classic 3

Endothelial Dystrophies
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Epithelial and Subepithelial Dystrophies

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Endothelial Dystrophies

Use the mnemonic to identify the names/materials/stains:

**Marilyn Monroe Always Gets Her Man in LA County**

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Endothelial Dystrophies

Use the mnemonic to identify the names/materials/stains:

Marilyn Monroe Always Gets Her Man in LA County

What is the well-known mnemonic regarding the classic 3?

Marilyn Monroe Always Gets Her Man in LA County
What does the mnemonic help us to remember?

The name, abnormal material, and stain for each of the classic 3
Macular corneal dystrophy: Mucopolysaccharide: Alcian blue
Epithelial and Subepithelial Dystrophies

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Endothelial Dystrophies

Use the mnemonic to identify the names/materials/stains:

- Marilyn Monroe Always Gets Her Man in LA County
  - macular dystrophy
  - mucopolysaccharide
  - Alcian blue

What does the mnemonic help us to remember?
The name, abnormal material, and stain for each of the classic 3
Corneal Dystrophies

Epithelial and Subepithelial Dystrophies

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Endothelial Dystrophies

Use the mnemonic to identify the names/materials/stains:

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<tr>
<th>Marilyn Monroe</th>
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<tr>
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<td>mucopolysaccharide</td>
</tr>
<tr>
<td>Alcian blue</td>
<td>granular dystrophy</td>
</tr>
<tr>
<td>hyaline</td>
<td>Masson trichrome</td>
</tr>
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What is the well-known mnemonic regarding the classic 3? Marilyn Monroe Always Gets Her Man in LA County.

What does the mnemonic help us to remember? The **name**, **abnormal material**, and **stain** for each of the classic 3...
Granular corneal dystrophy: Hyaline: Masson trichrome
Corneal Dystrophies

Epithelial and Subepithelial Dystrophies

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Endothelial Dystrophies

Use the mnemonic to identify the names/materials/stains:

Marilyn Monroe Always Gets Her Man in LA County

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Corneal Dystrophies

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Endothelial Dystrophies

Use the mnemonic to identify the names/materials/stains:

Marilyn Monroe Always Gets Her Man in LA County

What does the mnemonic help us to remember?
The name, abnormal material, and stain for each of the classic 3
Lattice corneal dystrophy, type 1 (classic lattice) E. Congo red. F, This same section viewed with polarized light
Corneal Dystrophies

Epithelial and Subepithelial Dystrophies

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Endothelial Dystrophies

Use the mnemonic to identify the names/materials/stains:

Marilyn Monroe Always Gets Her Man in LA County

What does the mnemonic help us to remember?

The name, abnormal material, and stain for each of the classic 3

Foreshadowing alert—we will see shortly there’s a drawback to overreliance on this mnemonic!

The time has come to address the drawback
Endothelial Dystrophies

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Corneal Dystrophies
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Epithelial and Subepithelial Dystrophies

Use the mnemonic to identify the names/materials/stains:

Marilyn Monroe Always Gets Her Man in LA County

Marilyn: macular dystrophy
Monroe: mucopolysaccharide
Always: Alcian blue
Gets: granular dystrophy
Her: hyaline
Man: Masson trichrome
in: lattice dystrophy
LA: amyloid
County: Congo Red

What does the mnemonic help us remember?
The name, abnormal material, and stain for each of the classic 3

Here's the rub: The term mucopolysaccharide is considered outdated—glycosaminoglycan is the preferred nomenclature.

Foreshadowing alert—we will see shortly there’s a drawback to overreliance on this mnemonic and stain for each of the classic 3

The time has come to address the drawback
Corneal Dystrophies

Epithelial and Subepithelial Dystrophies

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<tr>
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Here’s the rub: The term mucopolysaccharide is considered outdated—glycosaminoglycan is the preferred nomenclature.

Foreshadowing alert—we will see shortly there's a drawback to overreliance on this mnemonic!

The time has come to address the drawback
Corneal Dystrophies

Epithelial and Subepithelial Dystrophies

Epithelial-Stromal TGFBI Dystrophies
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Use the mnemonic to identify the names/materials/stains:

Marilyn Monroe Always Gets Her Man in LA County

What does the mnemonic help us remember?
The name, abnormal material, and stain for each of the classic 3

Here’s the rub: The term mucopolysaccharide is considered outdated—glycosaminoglycan is the preferred nomenclature. This is reflected in recent editions of the Cornea book, which refer to macular dystrophy as a defect in glycosaminoglycan production, not mucopolysaccharide production.

Foreshadowing alert—we will see shortly there’s a drawback to overreliance on this mnemonic!

The time has come to address the drawback
Corneal Dystrophies

Epithelial and Subepithelial Dystrophies

The problem is readily apparent—the macular dystrophy portion of the mnemonic only works if the abnormal material is called ‘mucopolysaccharide.’

Epithelial-Stromal TGFBI Dystrophies
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Marilyn Monroe Always Gets Her Man in LA County

What does the mnemonic help us identify?
- What is the name, abnormal material, and stain for each of the classic 3?

Foreshadowing alert—we will see shortly there’s a drawback to overreliance on this mnemonic and stain for each of the classic 3.

The time has come to address the drawback.
Corneal Dystrophies

Epithelial and Subepithelial Dystrophies

The problem is readily apparent—the macular dystrophy portion of the mnemonic only works if the abnormal material is called ‘mucopolysaccharide.’ So you’ll have to either modify the mnemonic to include GAGs (tweet your mods to me @EyeDentistAAO), or (gasp!) actually learn this factoid.

Here’s the rub: The term mucopolysaccharide is considered outdated—glycosaminoglycan is the preferred nomenclature. This is reflected in recent editions of the Cornea book, which refer to macular dystrophy as a defect in glycosaminoglycan production, not mucopolysaccharide production.

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The time has come to address the drawback

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Epithelial and Subepithelial Dystrophies

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**Endothelial Dystrophies**

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**Big 3 stromal dystrophies:**

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<tbody>
<tr>
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Endothelial Dystrophies

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Endothelial Dystrophies

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Endothelial Dystrophies

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2) Thiel-Behnke corneal dystrophy
3) Lattice, type 1
4) Lattice, variant types (III, IIIA, I/IIIA, IV)
5) Granular type 1
6) Granular type 2

Stromal Dystrophies
1) Macular corneal dystrophy
2) Schnyder corneal dystrophy
3) Congenital stromal corneal dystrophy
4) Fleck corneal dystrophy
5) Posterior amorphous corneal dystrophy
6) Pre-Descemet corneal dystrophy

Endothelial Dystrophies

Big 3 stromal dystrophies:
Fill in the table

<table>
<thead>
<tr>
<th>Common?</th>
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<th>Age of Onset</th>
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Endothelial Dystrophies

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Epithelial and Subepithelial Dystrophies

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Corneal Dystrophies

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Stromal Dystrophies

1) **Macular corneal dystrophy**
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Give 6 reasons that macular is the ‘black sheep’ of the big 3 stromal dystrophies:
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2)
3)
4)
5)
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Stromal Dystrophies
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Give 6 reasons that macular is the ‘black sheep’ of the big 3 stromal dystrophies:
1) It is AR (others are AD)
2) It is limbus-to-limbus (others are clear peripherally)
3) The cornea is hazy between lesions (others have clear spaces between lesions)
4) It’s gene locus is not \textit{TGFBI} (others are)
5) The cornea tends to thin in macular (others do not)
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Epithelial and Subepithelial Dystrophies

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(See next slide)
Corneal Dystrophies

Epithelial and Subepithelial Dystrophies

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*(ditto)*