ARMD risk factors:

- Family history
- Light irides
- Age
- Smoking
- Hyperopia

The mnemonic is **FLASH**
ARMD risk factors:

- **F** (two factors)
- **L**
- **A**
- **S** (two factors)
- **H**

The mnemonic is **FLASH**
ARMD risk factors:

- *Family history*;
- *Female*
- *Light irides*
- *Age*
- *Smoking*;
- *Sun exposure*
- *Hyperopia*

The mnemonic is **FLASH**
This is the combined DDx for both dry and wet ARMD—divide it into the respective differentials

Dry ARMD DDx

Start here, and work your way down the list → **Pattern dystrophy**
- Macroaneurysms
- Cuticular drusen
- Vitelliform exudative macular detachment
- Polypoidal choroidal vasculopathy
- Central serous chorioretinopathy
- RPE change after CSC
- Small choroidal melanoma
- Hydroxychloroquine toxicity

Wet ARMD DDx
This is the combined DDx for both dry and wet ARMD—divide it into the respective differentials

Dry ARMD DDx

Pattern dystrophy

Macroaneurysms
Cuticular drusen
Vitelliform exudative macular detachment
Polypoidal choroidal vasculopathy
Central serous chorioretinopathy
RPE change after CSC
Small choroidal melanoma
Hydroxychloroquine toxicity
Pattern dystrophy

Briefly, what is a pattern dystrophy?

This is the combined DDx for both dry and wet ARMD—divide it into the respective differentials
Pattern dystrophy

Briefly, what is a pattern dystrophy?
An inherited macular dystrophy that has a characteristic appearance (ie, a particular 'pattern')

This is the combined DDx for both dry and wet ARMD—divide it into the respective differentials
This is the combined DDx for both dry and wet ARMD—divide it into the respective differentials

**Dry ARMD DDx**

**Pattern dystrophy**

*Briefly, what is a pattern dystrophy?*
An inherited macular dystrophy that has a characteristic appearance (ie, a particular ‘pattern’)

*What is the inheritance pattern?*
Pattern dystrophy

Briefly, what is a pattern dystrophy?
An inherited macular dystrophy that has a characteristic appearance (ie, a particular 'pattern')

What is the inheritance pattern?
AD
This is the combined DDx for both dry and wet ARMD—divide it into the respective differentials

**Dry ARMD DDx**

**Pattern dystrophy**

Briefly, what is a pattern dystrophy?
An inherited macular dystrophy that has a characteristic appearance (ie, a particular ‘pattern’)

What is the inheritance pattern?
AD

Are pattern dystrophies associated with severe vision loss?

**Wet ARMD DDx**

Macroaneurysms

Cuticular drusen

Vitelliform exudative macular detachment

Polypoidal choroidal vasculopathy

CSR

RPE change after CSR

Small choroidal melanoma

Hydroxychloroquine toxicity
This is the combined DDx for both dry and wet ARMD—divide it into the respective differentials

**Pattern dystrophy**

*Briefly, what is a pattern dystrophy?*
An inherited macular dystrophy that has a characteristic appearance (ie, a particular ‘pattern’)

*What is the inheritance pattern?*
AD

*Are pattern dystrophies associated with severe vision loss?*
Generally no--vision is only slightly affected
This is the combined DDx for both dry and wet ARMD—divide it into the respective differentials

**Dry ARMD DDx**

**Pattern dystrophy**

*Briefly, what is a pattern dystrophy?*
An inherited macular dystrophy that has a characteristic appearance (ie, a particular ‘pattern’)

*What is the inheritance pattern?*
AD

*Are pattern dystrophies associated with severe vision loss?*
Generally no--vision is only slightly affected

*Do the macular ‘patterns’ appear early in life?*
**Pattern dystrophy**

*Briefly, what is a pattern dystrophy?*
An inherited macular dystrophy that has a characteristic appearance (i.e., a particular ‘pattern’)

*What is the inheritance pattern?*
AD

*Are pattern dystrophies associated with severe vision loss?*
Generally no--vision is only slightly affected

*Do the macular ‘patterns’ appear early in life?*
Generally no--they usually show up in middle adulthood
**Pattern dystrophy**

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Generally no--they usually show up in middle adulthood

*The BCSC Retina book identifies four pattern dystrophies by name--what are they?*
---
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---
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*The mnemonic is…*
**Q/A**

This is the combined DDx for both dry and wet ARMD—divide it into the respective differentials

**Dry ARMD DDx**

**Pattern dystrophy**

*Briefly, what is a pattern dystrophy?*
An inherited macular dystrophy that has a characteristic appearance (ie, a particular ‘pattern’)

*What is the inheritance pattern?*
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*Are pattern dystrophies associated with severe vision loss?*
Generally no--vision is only slightly affected

*Do the macular ‘patterns’ appear early in life?*
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*The BCSC Retina book identifies four pattern dystrophies by name--what are they?*
--B
--A
--R
--F

The mnemonic is…BARF?
Pattern dystrophy

Briefly, what is a pattern dystrophy?
An inherited macular dystrophy that has a characteristic appearance (ie, a particular ‘pattern’)

What is the inheritance pattern?
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Do the macular ‘patterns’ appear early in life?
Generally no--they usually show up in middle adulthood

The BCSC Retina book identifies four pattern dystrophies by name--what are they?
--Butterfly dystrophy
--Adult-onset foveomacular vitelliform dystrophy
--Reticular dystrophy
--Fundus pulverulentus
This is the combined DDx for both dry and wet ARMD—divide it into the respective differentials

Butterfly dystrophy

Adult-onset foveomacular vitelliform dystrophy

Reticular dystrophy

Fundus pulverulentus
This is the combined DDx for both dry and wet ARMD—divide it into the respective differentials

**Dry ARMD DDx**

*Pattern dystrophy*

**Macroaneurysms**
- Cuticular drusen
- Vitelliform exudative macular detachment
- Polypoidal choroidal vasculopathy
- Central serous chorioretinopathy
- RPE change after CSC
- Small choroidal melanoma
- Hydroxychloroquine toxicity

**Wet ARMD DDx**
This is the combined DDx for both dry and wet ARMD—divide it into the respective differentials

**Dry ARMD DDx**
- Pattern dystrophy

**Wet ARMD DDx**
- Macroaneurysms
  - Cuticular drusen
  - Vitelliform exudative macular detachment
  - Polypoidal choroidal vasculopathy
  - Central serous chorioretinopathy
  - RPE change after CSC
  - Small choroidal melanoma
  - Hydroxychloroquine toxicity
This is the combined DDx for both dry and wet ARMD—divide it into the respective differentials

- **Dry ARMD DDx**
  - Pattern dystrophy
  - Macroaneurysms
  - Cuticular drusen
  - Vitelliform exudative macular detachment

- **Wet ARMD DDx**
  - Polypoidal choroidal vasculopathy
  - CSR
  - RPE change after CSR
  - Small choroidal melanoma
  - Hydroxychloroquine toxicity

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What is a retinal macroaneurysm?

A focal dilatation of one of the early branches on the arteriolar side of the retinal circulatory tree.

- **Are they more likely to occur in the temporal, or nasal retina?** Temporal
- **Is it common to have multiple macroAs in an eye?** Yes
- **Is it common to have macroAs bilaterally?** No, they are bilateral in 10% or fewer of cases
- **Are there any systemic risk factors?** Yes—HTN (it is present in as many as 75% of cases).
- **Is age a risk factor?** Yes, most pts are over 50 years old.
- **Is gender a risk factor?** Yes, a preponderance of the pts are females.
- **By what two mechanisms do macroAs affect vision?** By bleeding, or leaking (ie, causing macular edema).

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**How are macroAs managed?**

- Via observation,
- or anti-VEGF agents,
- or photocoagulation
This is the combined DDx for both dry and wet ARMD—divide it into the respective differentials

<table>
<thead>
<tr>
<th>Dry ARMD DDx</th>
<th>Wet ARMD DDx</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pattern dystrophy</td>
<td>Pattern dystrophy</td>
</tr>
<tr>
<td>Macroaneurysms</td>
<td>Macular pigment epiphyseal</td>
</tr>
<tr>
<td>Cuticular drusen</td>
<td>Polypoidal choroidal vasculopathy</td>
</tr>
<tr>
<td>Vitelliform exudative macular detachment</td>
<td>RPE change after CSR</td>
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<tr>
<td>Polypoidal choroidal vasculopathy</td>
<td>Small choroidal melanoma</td>
</tr>
<tr>
<td>Hydroxychloroquine toxicity</td>
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</tr>
</tbody>
</table>

What is a retinal macroaneurysm?
A focal dilatation of one of the early branches on the arteriolar side of the retinal circulatory tree

Are they more likely to occur in the temporal, or nasal retina?
Temporal

Is it common to have multiple macroAs in an eye?
Yes

Is it common to have macroAs bilaterally?
No, they are bilateral in 10% or fewer of cases

Are there any systemic risk factors?
Yes--HTN

Is age a risk factor?
Yes, most pts are over 50 years old

Is gender a risk factor?
Yes, a preponderance of the pts are she's

By what two mechanisms do macroAs affect vision?
By bleeding, or leaking (ie, causing macular edema)

How are macroAs managed?
Via observation, or anti-VEGF agents, or photocoagulation
1A) FP of eye with a retinal arteriole macroaneurysm, evidenced by exudation and subretinal blood in the area of an arteriolar bifurcation. (1B) FA in the early phase highlights the focal hyperfluorescent dilation of the arteriole.
This is the combined DDx for both dry and wet ARMD—divide it into the respective differentials

**Dry ARMD DDx**

- Pattern dystrophy
- Macroaneurysms
- Cuticular drusen
- Vitelliform exudative macular detachment (VMD)
- Polypoidal choroidal vasculopathy
- CSR: RPE change after CSR
- Small choroidal melanoma
- Hydroxychloroquine toxicity

**Wet ARMD DDx**

- Pattern dystrophy
- Macular edema
- Vitelliform exudative macular detachment (VMD)
- Polypoidal choroidal vasculopathy
- CSR: RPE change after CSR
- Small choroidal melanoma
- Hydroxychloroquine toxicity

---

**What is a retinal macroaneurysm?**

A focal dilatation of one of the early branches on the arteriolar side of the retinal circulatory tree.

**Are they more likely to occur in the temporal, or nasal retina?**

- Temporal

Is it common to have multiple macroAs in an eye?

- Yes

Is it common to have macroAs bilaterally?

- No, they are bilateral in 10% or fewer of cases.

Are there any systemic risk factors?

- Yes—HTN. (It is present in as many as 75% of cases.)

Is age a risk factor?

- Yes, most pts are over 50 years old.

Is gender a risk factor?

- Yes, a preponderance of the pts are she's.

By what two mechanisms do macroAs affect vision?

- By bleeding, or leaking (ie, causing macular edema)

How are macroAs managed?

- Via observation, or anti-VEGF agents, or photocoagulation.
What is a retinal macroaneurysm?
A focal dilatation of one of the early branches on the arteriolar side of the retinal circulatory tree

Are they more likely to occur in the temporal, or nasal retina?
Temporal

Macroaneurysms

What is a retinal macroaneurysm? A focal dilatation of one of the early branches on the arteriolar side of the retinal circulatory tree

Are they more likely to occur in the temporal, or nasal retina?
Temporal
**Dry ARMD DDx**

- Pattern dystrophy
- Macroaneurysms
- Cuticular drusen
- Vitelliform exudative macular detachment
- Polypoidal choroidal vasculopathy
- CSR
- RPE change after CSR
- Small choroidal melanoma
- Hydroxychloroquine toxicity

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**Wet ARMD DDx**

- Macraeneurysms

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**What is a retinal macroaneurysm?**

A focal dilatation of one of the early branches on the arteriolar side of the retinal circulatory tree.

**Are they more likely to occur in the temporal, or nasal retina?**

Temporal

**Is it common to have multiple macroAs in an eye?**

Yes

**Is it common to have macroAs bilaterally?**

No, they are bilateral in 10% or fewer of cases.

**Are there any systemic risk factors?**

Yes--HTN. (It is present in as many as 75% of cases.)

**Is age a risk factor?**

Yes, most pts are over 50 years old.

**Is gender a risk factor?**

Yes, a preponderance of the pts are females.

**By what two mechanisms do macroAs affect vision?**

By bleeding, or leaking (ie, causing macular edema)

**How are macroAs managed?**

Via observation, or anti-VEGF agents, or photocoagulation.
This is the combined DDx for both dry and wet ARMD—divide it into the respective differentials

Dry ARMD DDx

- Pattern dystrophy
- Macroaneurysms
- Cuticular drusen
- Vitelliform exudative macular detachment
- Polypoidal choroidal vasculopathy
- CSR
- RPE change after CSR
- Small choroidal melanoma
- Hydroxychloroquine toxicity

Wet ARMD DDx

- Macoaneurysms

What is a retinal macroaneurysm?
A focal dilatation of one of the early branches on the arteriolar side of the retinal circulatory tree

Are they more likely to occur in the temporal, or nasal retina?
Temporal

Is it common to have multiple macroAs in an eye?
Yes

Is it common to have macroAs bilaterally?
No, they are bilateral in 10% or fewer of cases

Are there any systemic risk factors?
Yes—HTN. (It is present in as many as 75% of cases.)

Is age a risk factor?
Yes, most pts are over 50 years old

Is gender a risk factor?
Yes, a preponderance of the pts are female

By what two mechanisms do macroAs affect vision?
By bleeding, or leaking (ie, causing macular edema)

How are macroAs managed?
Via observation, or anti-VEGF agents, or photocoagulation
What is a retinal macroaneurysm?
A focal dilatation of one of the early branches on the arteriolar side of the retinal circulatory tree

Are they more likely to occur in the temporal, or nasal retina?
Temporal

Is it common to have multiple macroAs in an eye?
Yes

Is it common to have macroAs bilaterally?

Macroaneurysms
What is a retinal macroaneurysm?
A focal dilatation of one of the early branches on the arteriolar side of the retinal circulatory tree

Are they more likely to occur in the temporal, or nasal retina? Temporal

Is it common to have multiple macroAs in an eye? Yes

Is it common to have macroAs bilaterally? No, they are bilateral in % or fewer of cases

Macroaneurysms
This is the combined DDx for both dry and wet ARMD—divide it into the respective differentials:

**Dry ARMD DDx**

- Pattern dystrophy
- Macroaneurysms
- Cuticular drusen
- Vitelliform exudative macular detachment
- Polypoidal choroidal vasculopathy
- CSR
- RPE change after CSR
- Small choroidal melanoma
- Hydroxychloroquine toxicity

**Wet ARMD DDx**

- Macular hole
- Neovascularization
- Neovascularization detachment
- Neovascularization epiretinal membrane
- Polypoidal choroidal vasculopathy
- Central serous retinopathy
- Retinal detachment
- Retinal pigment epithelial detachment
- Retinal pigment epithelial atrophy
- Retinal pigment epithelial neovascularization

---

**What is a retinal macroaneurysm?**
A focal dilatation of one of the early branches on the arteriolar side of the retinal circulatory tree.

**Are they more likely to occur in the temporal, or nasal retina?**
Temporal

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Yes

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No, they are bilateral in 10% or fewer of cases

Are there any systemic risk factors?

- HTN

Is age a risk factor?
Yes, most pts are over 50 years old

Is gender a risk factor?
Yes, a preponderance of the pts are she's

By what two mechanisms do macroAs affect vision?
- Bleeding, or leaking (ie, causing macular edema)

How are macroAs managed?
- Observation, or anti-VEGF agents, or photocoagulation
Q/A

What is a retinal macroaneurysm?
A focal dilatation of one of the early branches on the arteriolar side of the retinal circulatory tree

Are they more likely to occur in the temporal, or nasal retina?
Temporal

Is it common to have multiple macroAs in an eye?
Yes

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No, they are bilateral in 10% or fewer of cases

Are there any systemic risk factors?
Yes-- (It is present in as many as 75% of cases.)
### Dry ARMD DDx

- Pattern dystrophy
- Macroaneurysms
- Cuticular drusen
- Vitelliform exudative macular detachment
- Polypoidal choroidal vasculopathy
- CSR
- RPE change after CSR
- Small choroidal melanoma
- Hydroxychloroquine toxicity

### Wet ARMD DDx

- Macular ischemia
- Macular neovascularization
- Retinal detachment
- Disc neovascularization
- Branch retinal vein occlusion
- DME
- Intraocular inflammation
- Macular hemorrhage

---

**What is a retinal macroaneurysm?**
A focal dilatation of one of the early branches on the arteriolar side of the retinal circulatory tree.

**Are they more likely to occur in the temporal, or nasal retina?**
Temporal.

**Is it common to have multiple macroAs in an eye?**
Yes.

**Is it common to have macroAs bilaterally?**
No, they are bilateral in 10% or fewer of cases.

**Are there any systemic risk factors?**
Yes-- HTN. (It is present in as many as 75% of cases.)

---

**Macroaneurysms**
This is the combined DDx for both dry and wet ARMD—divide it into the respective differentials.

### Wet ARMD DDx

- **Pattern dystrophy**
- **Macroaneurysms**
- **Cuticular drusen**
- **Vitelliform exudative macular detachment**
- **Polypoidal choroidal vasculopathy**
- **CSR**
- **RPE change after CSR**
- **Small choroidal melanoma**
- **Hydroxychloroquine toxicity**

### Dry ARMD DDx

- **Pattern dystrophy**
- **Macroaneurysms**

---

**What is a retinal macroaneurysm?**

A focal dilatation of one of the early branches on the arteriolar side of the retinal circulatory tree.

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Yes—HTN. (It is present in as many as 75% of cases.)

**Is age a risk factor?**

Yes, most pts are over 50 years old

**Is gender a risk factor?**

Yes, a preponderance of the pts are she's

**By what two mechanisms do macroAs affect vision?**

- By bleeding, or leaking (ie, causing macular edema)

**How are macroAs managed?**

- Via observation, or anti-VEGF agents, or photocoagulation

33
What is a retinal macroaneurysm?
A focal dilatation of one of the early branches on the arteriolar side of the retinal circulatory tree

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This is the combined DDx for both dry and wet ARMD—divide it into the respective differentials

**Dry ARMD DDx**

- Pattern dystrophy
- Macroaneurysms
- Cuticular drusen
- Vitelliform exudative macular detachment
- Polypoidal choroidal vasculopathy
- CSR
- RPE change after CSR
- Small choroidal melanoma
- Hydroxychloroquine toxicity

**Wet ARMD DDx**

- Macular edema
- Branch retinal vein occlusion
- Hemangioma
- Hemorrhage
- Lipemia retinalis
- Optical coherence tomography-detected exudative macular detachment
- Medial rectus muscle detachment
- Retinal detachment

---

**What is a retinal macroaneurysm?**
A focal dilatation of one of the early branches on the arteriolar side of the retinal circulatory tree.

**Are they more likely to occur in the temporal, or nasal retina?**
Temporal

**Is it common to have multiple macroAs in an eye?**
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Yes-- HTN. (It is present in as many as 75% of cases.)

Is age a risk factor?
Yes, most pts are over 50 years old

Is gender a risk factor?
**Q/A**

This is the combined DDx for both dry and wet ARMD—divide it into the respective differentials

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**Dry ARMD DDx**

- Pattern dystrophy
- Macroaneurysms
- Cuticular drusen
- Vitelliform exudative macular detachment
- Polypoidal choroidal vasculopathy
- Central serous retinopathy
- Retinal pigment epithelial (RPE) change after central serous retinal detachments
- Small choroidal melanomas
- Hydroxychloroquine toxicity

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**Wet ARMD DDx**

- Macular degeneration
- Macular Pucker
- Macular telangiectasia
- Macular edema
- Macular exudative detachment
- Macular traction retinal detachment
- Macular hole
- Macular scar
- Macular pigmentary changes
- Macular degeneration
- Macular hole
- Macular pucker
- Macular telangiectasia
- Macular traction retinal detachment
- Macular exudative detachment
- Macular edema
- Macular pigmentary changes

---

**What is a retinal macroaneurysm?**

A focal dilatation of one of the early branches on the arteriolar side of the retinal circulatory tree.

**Are they more likely to occur in the temporal, or nasal retina?**

Temporal

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**Are there any systemic risk factors?**

Yes--HTN. (It is present in as many as 75% of cases.)

**Is age a risk factor?**

Yes, most pts are over 50 years old.

**Is gender a risk factor?**

Yes, a preponderance of the pts are M v F.
**Dry ARMD DDx**

- Pattern dystrophy
- Macroaneurysms
- Cuticular drusen
- Vitelliform exudative macular detachment
- Polypoidal choroidal vasculopathy
- CSR
- RPE change after CSR
- Small choroidal melanoma
- Hydroxychloroquine toxicity

**What is a retinal macroaneurysm?**
A focal dilatation of one of the early branches on the arteriolar side of the retinal circulatory tree

**Are they more likely to occur in the temporal, or nasal retina?**
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**Is gender a risk factor?**
Yes, a preponderance of the pts are ♀
What is a retinal macroaneurysm?
A focal dilatation of one of the early branches on the arteriolar side of the retinal circulatory tree

Are they more likely to occur in the temporal, or nasal retina?
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By what two mechanisms do macroAs affect vision?
By bleeding, or leaking (ie, causing macular edema)
What is a retinal macroaneurysm?
A focal dilatation of one of the early branches on the arteriolar side of the retinal circulatory tree

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By what two mechanisms do macroAs affect vision?
By bleeding, or leaking (ie, causing macular edema)
This is the combined DDx for both dry and wet ARMD—divide it into the respective differentials

Macroaneurysm: Bleeding, and macular edema
What is a retinal macroaneurysm?
A focal dilatation of one of the early branches on the arteriolar side of the retinal circulatory tree

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By what two mechanisms do macroAs affect vision?
By bleeding, or leaking (ie, causing macular edema)

How are macroAs managed?

- Observation
- Anti-VEGF agents
- Photocoagulation
**This is the combined DDx for both dry and wet ARMD—divide it into the respective differentials**

**Dry ARMD DDx**

- Presumed prefoveal pattern dystrophy
- Retinal angiod streaks
- Multiple small drusen
- Foveal ring drusen
- Focal macular fibrosis
- Vascular attenuation

**Wet ARMD DDx**

- Macular edema
- Accumulation of intraretinal fluid
- Ischemic changes
- New vessels

---

**What is a retinal macroaneurysm?**

A focal dilatation of one of the early branches on the arteriolar side of the retinal circulatory tree.

**Are they more likely to occur in the temporal, or nasal retina?**

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**By what two mechanisms do macroAs affect vision?**

By bleeding, or leaking (ie, causing macular edema)

**How are macroAs managed?**

Via observation, or anti-VEGF agents, or photocoagulation.
This is the combined DDx for both dry and wet ARMD—divide it into the respective differentials

**Dry ARMD DDx**

- Pattern dystrophy

**Wet ARMD DDx**

- Macroaneurysms
- *Cuticular drusen*
  - Vitelliform exudative macular detachment
  - Polypoidal choroidal vasculopathy
  - Central serous chorioretinopathy
  - RPE change after CSC
  - Small choroidal melanoma
  - Hydroxychloroquine toxicity
Dry ARMD DDx

Pattern dystrophy
Cuticular drusen

Vitelliform exudative macular detachment
Polypoidal choroidal vasculopathy
Central serous chorioretinopathy
  RPE change after CSC
  Small choroidal melanoma
  Hydroxychloroquine toxicity

Wet ARMD DDx

Macroaneurysms
This is the combined DDx for both dry and wet ARMD— divide it into the respective differentials

<table>
<thead>
<tr>
<th><strong>Dry ARMD DDx</strong></th>
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<td></td>
<td>Hydroxychloroquine toxicity</td>
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</table>

*What are drusen?*

- **Cuticular drusen**
  - Vitelliform exudative macular detachment
  - Polypoidal choroidal vasculopathy
  - Central serous chorioretinopathy
  - RPE change after CSC
  - Small choroidal melanoma
  - Hydroxychloroquine toxicity
This is the combined DDx for both dry and wet ARMD—divide it into the respective differentials.

**What are drusen?**
Small, round-ish, yellow-ish deposits just beneath the RPE.

**Cuticular drusen**
- Vitelliform exudative macular detachment
- Polypoidal choroidal vasculopathy
- Central serous chorioretinopathy
- RPE change after CSC
- Small choroidal melanoma
- Hydroxychloroquine toxicity
This is the combined DDx for both dry and wet ARMD—divide it into the respective differentials

What are drusen? Small, round-ish, yellow-ish deposits just beneath the RPE

There are three main types of entities that are drusen-like (two actually are drusen). What are they?

--

Cuticular drusen

Vitelliform exudative macular detachment
Polypoidal choroidal vasculopathy
Central serous chorioretinopathy
RPE change after CSC
Small choroidal melanoma
Hydroxychloroquine toxicity
What are drusen?
Small, round-ish, yellow-ish deposits just beneath the RPE

There are three main types of entities that are drusen-like (two actually are drusen).
What are they?
--Cutoicular drusen
--Basal linear drusen
--Reticular (pseudo)drusen

Cuticular drusen
Vitelliform exudative macular detachment
Polypoidal choroidal vasculopathy
Central serous chorioretinopathy
RPE change after CSC
Small choroidal melanoma
Hydroxychloroquine toxicity
This is the combined DDx for both dry and wet ARMD—divide it into the respective differentials

**Dry ARMD DDx**

- Pattern dystrophy
- Macroaneurysms
- Cuticular drusen

**Wet ARMD DDx**

- Pattern dystrophy
- Macroaneurysms
- Vitelliform exudative macular detachment
- Polypoidal choroidal vasculopathy
- Central serous chorioretinopathy
- RPE change after CSC
- Small choroidal melanoma
- Hydroxychloroquine toxicity

---

**What are drusen?**

Small, round-ish, yellow-ish deposits just beneath the RPE.

**What are they?**

---**Cuticular drusen aka...**

---Basal linear drusen

---Reticular (pseudo)drusen

**Cuticular drusen are known by what other name?**

Basal laminar drusen
This is the combined DDx for both dry and wet ARMD—divide it into the respective differentials.

**Dry ARMD DDx**

- Pattern dystrophy
- Macroaneurysms
- Cuticular drusen

**Wet ARMD DDx**

- Pattern dystrophy
- Macroaneurysms
- Cuticular drusen
- Vitelliform exudative macular detachment
- Polypoidal choroidal vasculopathy
- Central serous chorioretinopathy
- RPE change after CSC
- Small choroidal melanoma
- Hydroxychloroquine toxicity

---

**What are drusen?**
Small, round-ish, yellow-ish deposits just beneath the RPE.

There are three main types of entities that are drusen-like (two actually are drusen).

**What are they?**

--*Cuticular drusen aka*...basal laminar drusen
--Basal linear drusen
--Reticular (pseudo)drusen

**Cuticular drusen are known by what other name?**
Basal laminar drusen
**What are drusen?**
Small, round-ish, yellow-ish deposits just beneath the RPE

**There are three main types:**
- **Cuticular drusen** aka...basal laminar drusen aka...
- **Basal linear drusen** aka...
- **Reticular (pseudo)drusen**

Based on their appearance, cuticular/basal laminar drusen and basal linear drusen are known by what other names?

**Cuticular drusen**
Vitelliform exudative macular detachment
Polypoidal choroidal vasculopathy
Central serous chorioretinopathy
RPE change after CSC
Small choroidal melanoma
Hydroxychloroquine toxicity
This is the combined DDx for both dry and wet ARMD—divide it into the respective differentials

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<td>Hydroxychloroquine toxicity</td>
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What are drusen?
Small, round-ish, yellow-ish deposits just beneath the RPE

There are three main types:
What are they?
--Cuticular drusen *aka* basal laminar drusen *aka* hard drusen
--Basal linear drusen *aka* soft drusen
--Reticular (pseudo)drusen

Based on their appearance, cuticular/basal laminar drusen and basal linear drusen are known by what other names? **Hard drusen and soft drusen, respectively**
This is the combined DDx for both dry and wet ARMD—divide it into the respective differentials

Cuticular drusen
This is the combined DDx for both dry and wet ARMD—divide it into the respective differentials.

**Dry ARMD DDx**

- Pattern dystrophy
- Macroaneurysms
- Cuticular drusen

**Wet ARMD DDx**

- Macular schisis
- Vitelliform exudative macular detachment
- Polypoidal choroidal vasculopathy
- Central serous chorioretinopathy
- RPE change after CSC
- Small choroidal melanoma
- Hydroxychloroquine toxicity

---

**What are drusen?**

Small, round-ish, yellowish deposits just beneath the RPE.

**What are they?**

There are three main types:

- Cuticular drusen aka basal laminar drusen aka **hard drusen**
- Basal linear drusen aka **soft drusen**
- Reticular (pseudo)drusen

Based on their appearance, cuticular/basal laminar drusen and basal linear drusen are known by what other names?

**Hard drusen and soft drusen, respectively**

**What is meant by a soft vs hard appearance?**

It refers to how sharply the drusen are demarcated, i.e., how well-defined their borders are.
This is the combined DDx for both dry and wet ARMD—divide it into the respective differentials

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What are drusen?
Small, round-ish, yellow-ish deposits just beneath the RPE

There are three main types:

- Cuticular drusen aka...basal laminar drusen aka...**hard drusen**
- Basal linear drusen aka...**soft drusen**
- Reticular (pseudo)drusen

Based on their appearance, cuticular/basal laminar drusen and basal linear drusen are known by what other names?

**Hard drusen and soft drusen**, respectively

**What is meant by a soft vs hard appearance?**
It refers to how sharply the drusen are demarcated, ie, how well-defined their borders are.

**Cuticular drusen**
This is the combined DDx for both dry and wet ARMD—divide it into the respective differentials

Basal laminar ‘hard’ drusen

Basal linear ‘soft’ drusen
This is the combined DDx for both dry and wet ARMD—divide it into the respective differentials

**What are drusen?**
Small, round-ish, yellow-ish deposits just beneath the RPE

*There are three main types of entities that are drusen-like (two actually are drusen). What are they?*
- **Cuticular drusen** aka...**basal laminar drusen** aka...**hard drusen**
  --Basal linear drusen aka...**soft** drusen
  --Reticular (pseudo)drusen

---

**Basement membrane** of RPE
**Inner collagenous** layer
**Elastic** layer
**Outer collagenous** layer
**Basement membrane** of choriocapillaris
This is the combined DDx for both dry and wet ARMD—divide it into the respective differentials

**What are drusen?**
Small, round-ish, yellow-ish deposits just beneath the RPE.

**There are three main types of entities that are drusen-like (two actually are drusen).**

**What are they?**
- **Cuticular drusen** aka **basal laminar drusen** aka **hard drusen**
  -- Basal linear drusen aka **soft** drusen
  -- Reticular (pseudo)drusen

**Where are cuticular/basal laminar drusen found?**
Between the basement membrane of the RPE and the basal membrane—‘basal lamina,’ get it?—of the RPE cells.
What are drusen?
Small, round-ish, yellow-ish deposits just beneath the RPE.

There are three main types of entities that are drusen-like (two actually are drusen).

1. Cuticular drusen
   - aka basal laminar drusen
   - aka hard drusen

2. Basal linear drusen
   - aka soft drusen

3. Reticular (pseudo)drusen

What are they?

- Cuticular/basal laminar drusen
  - Within the fibers of the inner collagenous layer

Where are basal linear drusen found?

This is the combined DDx for both dry and wet ARMD—divide it into the respective differentials.
This is the combined DDx for both dry and wet ARMD—divide it into the respective differentials

**What are drusen?**
Small, round-ish, yellow-ish deposits just beneath the RPE

*There are three main types of entities that are drusen-like (two actually are drusen). What are they?*

--Cuticular drusen *aka... basal laminar drusen aka... hard drusen*

--**Basal linear drusen aka... soft** drusen

--Reticular (pseudo)drusen

---

**Cuticular drusen**

- PR outer segs

**RPE cells**

**Basement membrane of RPE**

**Inner collagenous layer**

**Elastic layer**

**Outer collagenous layer**

**Basement membrane of choriocapillaris**

---

**Macroaneurysms**

---

**Where are basal linear drusen found?**
Within the fibers of the inner collagenous layer

---

**Basal linear drusen**
This is the combined DDx for both dry and wet ARMD—divide it into the respective differentials

What are drusen?
Small, round-ish, yellow-ish deposits just beneath the RPE

There are three main types of entities that are drusen-like (two actually are drusen).
What are they?
--Cuticular drusen aka...basal laminar drusen aka...hard drusen
--Basal linear drusen aka...soft drusen
--Reticular (pseudo)drusen

Where are reticular pseudodrusen found?

Cuticular/basal laminar drusen

Basement membrane of RPE

Inner collagenous layer

Elastic layer

Outer collagenous layer

Basement membrane of choriocapillaris
This is the combined DDx for both dry and wet ARMD—divide it into the respective differentials

What are drusen?
Small, round-ish, yellow-ish deposits just beneath the RPE

There are three main types of entities that are drusen-like (two actually are drusen). What are they?
-- Cuticular drusen aka basal laminar drusen aka hard drusen
-- Basal linear drusen aka soft drusen
-- Reticular (pseudo)drusen

Where are reticular pseudodrusen found?
Between the apical surface of the RPE and the overlying PRs (i.e., just under the neurosensory retina)

What are drusen?
Small, round-ish, yellow-ish deposits just beneath the RPE

There are three main types of entities that are drusen-like (two actually are drusen). What are they?
-- Cuticular drusen aka basal laminar drusen aka hard drusen
-- Basal linear drusen aka soft drusen
-- Reticular (pseudo)drusen
This is the combined DDx for both dry and wet ARMD—divide it into the respective differentials

**Dry ARMD DDx**
- Pattern dystrophy
- Cuticular drusen

**Wet ARMD DDx**
- Macroaneurysms
- Vitelliform exudative macular detachment
  - Polypoidal choroidal vasculopathy
  - Central serous chorioretinopathy
    - RPE change after CSC
  - Small choroidal melanoma
  - Hydroxychloroquine toxicity
This is the combined DDx for both dry and wet ARMD—divide it into the respective differentials

**Dry ARMD DDx**
- Pattern dystrophy
- Cuticular drusen

**Wet ARMD DDx**
- Macroaneurysms
- Vitelliform exudative macular detachment
- Polypoidal choroidal vasculopathy
- Central serous chorioretinopathy
- RPE change after CSC
- Small choroidal melanoma
- Hydroxychloroquine toxicity
This is the combined DDx for both dry and wet ARMD—divide it into the respective differentials

Dry ARMD DDx
- Pattern dystrophy
- Cuticular drusen

Wet ARMD DDx
- Macroaneurysms
- Vitelliform exudative macular detachment

What is vitelliform exudative macular detachment (VEMD)?
This is the combined DDx for both dry and wet ARMD—divide it into the respective differentials

Dry ARMD DDx
- Pattern dystrophy
- Cuticular drusen

Wet ARMD DDx
- Macroaneurysms
- Vitelliform exudative macular detachment
- Polypoidal choroidal vasculopathy
- Central serous chorioretinopathy
- RPE change after CSR
- Small choroidal melanoma
- Hydroxychloroquine toxicity

What is vitelliform exudative macular detachment (VEMD)?
The name says it all—an exudative detachment of the macula in which the subretinal fluid is yellow.
**Dry ARMD DDx**
- Pattern dystrophy
- Cuticular drusen

**Wet ARMD DDx**
- Polypoidal choroidal vasculopathy
- Central serous retinopathy
- RPE change after CSR
- Small choroidal melanoma
- Hydroxychloroquine toxicity

**Vitelliform exudative macular detachment**

*What is vitelliform exudative macular detachment (VEMD)?*
The name says it all--an exudative detachment of the macula in which the subretinal fluid is yellow.

*With what (discussed recently in this slide-set) lesion is it associated?*
**Dry ARMD DDx**

- Pattern dystrophy
- Cuticular drusen

**Wet ARMD DDx**

- Macroaneurysms
- Polypoidal choroidal vasculopathy
- Central serous retinopathy
- RPE change after CSR
- Small choroidal melanoma
- Hydroxychloroquine toxicity

---

**What is vitelliform exudative macular detachment (VEMD)?**

The name says it all—an exudative detachment of the macula in which the subretinal fluid is yellow.

**With what (discussed recently in this slide-set) lesion is it associated?**

VEMD occurs in eyes with extensive **cuticular drusen**.
Vitelliform exudative macular detachment. Note the cuticular drusen
This is the combined DDx for both dry and wet ARMD—divide it into the respective differentials.

**Dry ARMD DDx**
- Pattern dystrophy
- Cuticular drusen

**Wet ARMD DDx**
- Macroneurysms
- Vitelliform exudative macular detachment
- Polypoidal choroidal vasculopathy
- Central serous retinopathy
- Retinal pigment epithelial change after CSR
- Small choroidal melanoma
- Hydroxychloroquine toxicity

**What is vitelliform exudative macular detachment (VEMD)?**
The name says it all—an exudative detachment of the macula in which the subretinal fluid is yellow.

Hmm…An exudative detachment of the macula with yellow subretinal fluid…What condition does that sound like?
Dry ARMD DDx

Pattern dystrophy
Cuticular drusen

Wet ARMD DDx

Macroneurysms

Polypoidal choroidal vasculopathy
Central serous retinopathy
RPE change after CSR
Small choroidal melanoma
Hydroxychloroquine toxicity

**Vitelliform exudative macular detachment**

*What is vitelliform exudative macular detachment (VEMD)?*
The name says it all—*an exudative detachment of the macula in which the subretinal fluid is yellow*

*Hmm…An exudative detachment of the macula with yellow subretinal fluid… What condition does that sound like?*
Best disease
**What is vitelliform exudative macular detachment (VEMD)?**

The name says it all—*an exudative detachment of the macula in which the subretinal fluid is yellow*.

**Hmm…An exudative detachment of the macula with yellow subretinal fluid…**

**What condition does that sound like?**

Best disease

**Are VEMD and Best dz related?**
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What is vitelliform exudative macular detachment (VEMD)?

The name says it all—an exudative detachment of the macula in which the subretinal fluid is yellow.

Hmm…An exudative detachment of the macula with yellow subretinal fluid…

What condition does that sound like?

Best disease

Are VEMD and Best dz related?

No, but their appearance can be very similar.
**Q**

This is the combined DDx for both dry and wet ARMD—divide it into the respective differentials.

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**Vitelliform exudative macular detachment**

<table>
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<th>Life-stage of onset?</th>
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**Best dz VEMD**

- Are VEMD and Best dz related?
- No, but their appearance can be very similar.

**Hydroxychloroquine toxicity**
This is the combined DDx for both dry and wet ARMD—divide it into the respective differentials.

**Dry ARMD DDx**
- Pattern dystrophy
- Cuticular drusen
- Polypoidal choroidal vasculopathy

**Wet ARMD DDx**
- Macroaneurysms
- Vitelliform exudative macular detachment
- Polypoidal choroidal vasculopathy

**Vitelliform exudative macular detachment (VEMD)**
- Life-stage of onset?
  - Childhood
  - Adulthood

**Best disease**
- VEMD and Best dz
  - A: Are they related?
  - No, but their appearance can be very similar.

---

**What is vitelliform exudative macular detachment (VEMD)?**
- The name says it all— an exudative detachment of the macula in which the subretinal fluid is yellow.
- With what (discussed recently in this slide-set) lesion is it associated?
- VEMD occurs in eyes with extensive cuticular drusen.
- Hmm… An exudative detachment of the macula with yellow subretinal fluid… What condition does that sound like?
- Best dz

**Are VEMD and Best dz related?**
- No, but their appearance can be very similar.
Dry ARMD DDx
- Pattern dystrophy
- Cuticular drusen
- Polypoidal choroidal vasculopathy

Wet ARMD DDx
- Macroaneurysms
- Vitelliform exudative macular detachment

**Vitelliform exudative macular detachment (VEMD)**

**Life-stage of onset?**
- Best dz: Childhood
- VEMD: Adulthood

**Cuticular drusen present?**

---

**Are VEMD and Best dz related?**
No, but their appearance can be very similar.
**What is vitelliform exudative macular detachment (VEMD)?**

The name says it all— an exudative detachment of the macula in which the subretinal fluid is yellow.

With what (discussed recently in this slide-set) lesion is it associated?

VEMD occurs in eyes with extensive cuticular drusen.

Hmm… An exudative detachment of the macula with yellow subretinal fluid… What condition does that sound like?

Best disease.

Are VEMD and Best dz related?

No, but their appearance can be very similar.
**Dry ARMD DDx**
- Pattern dystrophy
- Cuticular drusen
- Polypoidal choroidal vasculopathy

**Wet ARMD DDx**
- Macroaneurysms

**Vitelliform exudative macular detachment**

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**Q**

This is the combined DDx for both dry and wet ARMD—divide it into the respective differentials

**What is vitelliform exudative macular detachment (VEMD)?**

The name says it all—**an exudative detachment of the macula in which the subretinal fluid is yellow**.

With what (discussed recently in this slide-set) lesion is it associated?

VEMD occurs in eyes with extensive cuticular drusen.

Hmm…An exudative detachment of the macula with yellow subretinal fluid…

What condition does that sound like?

Best disease

Are VEMD and Best dz related?

No, but their appearance can be very similar.
**Dry ARMD DDx**

- Pattern dystrophy
- Cuticular drusen

**Wet ARMD DDx**

- Macroaneurysms
- Polypoidal choroidal vasculopathy

---

**Vitelliform exudative macular detachment (VEMD)**

- **What is VEMD?**
  - The name says it all— an exudative detachment of the macula in which the subretinal fluid is yellow.

- **With what lesion is it associated?**
  - VEMD occurs in eyes with extensive cuticular drusen.

- **What condition does that sound like?**
  - Best disease?

- **Are VEMD and Best dz related?**
  - No, but their appearance can be very similar.

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**VEMD and Best dz**
## Combined DDx for Dry and Wet ARMD

**Dry ARMD DDx**

- Pattern dystrophy
- Cuticular drusen
- Macular neovascularization
- Vitelliform exudative macular detachment
- Polypoidal choroidal vasculopathy
- CSR
- Small choroidal melanoma
- Hydroxychloroquine toxicity

**Wet ARMD DDx**

- Pattern dystrophy
- Cuticular drusen
- Macular neovascularization
- Vitelliform exudative macular detachment

---

**What is vitelliform exudative macular detachment (VEMD)?**

The name says it all— an exudative detachment of the macula in which the subretinal fluid is yellow.

**With what lesion is it associated?**

VEMD occurs in eyes with extensive cuticular drusen.

---

**What condition does that sound like?**

Best disease?

**Are VEMD and Best dz related?**

No, but their appearance can be very similar.

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**Life-stage of onset?**

- Childhood
- Adulthood

**Cuticular drusen present?**

- No
- Yes

**EOG abnormal?**

- Yes
- No

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**What does EOG stand for?**

Electro-oculogram.

**In a nutshell, what does an electro-oculogram measure?**

RPE function.

**Again in a nutshell, how does it work?**

The resting potential of the RPE is measured in both the light- and dark-adapted states, and a ratio of the two resting potentials is calculated.

**What is this ratio called?**

The Arden ratio.

**What is the normal range for the Arden ratio?**

1.9-2.8

**At what value is the Arden ratio considered definitely abnormal?**

Below 1.7 (it's usually <1.5 in Best dz, and ratios as low as 1.1 are not uncommon).
This is the combined DDx for both dry and wet ARMD—divide it into the respective differentials

**Dry ARMD DDx**
- Pattern dystrophy
- Macroaneurysms
- Cuticular drusen

**Wet ARMD DDx**
- Vitelliform exudative macular detachment
- Polypoidal choroidal vasculopathy
- CSR
- RPE change after CSR
- Small choroidal melanoma
- Hydroxychloroquine toxicity

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Hmm…An exudative detachment of the macula with yellow subretinal fluid…What condition does that sound like?

Best disease?

Are VEMD and Best dz related?

No, but their appearance can be very similar.

Best dz VEMD

Life-stage of onset?

Childhood, Adulthood

Cuticular drusen present?

No, Yes

EOG abnormal?

Yes, No

What does EOG stand for?

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Dry ARMD DDx

Pattern dystrophy

Cuticular drusen

Vitelliform exudative macular detachment

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Best dz VEMD

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Childhood

Adulthood

Cuticular drusen present?

No

Yes

EOG abnormal?

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Are VEMD and Best dz related? No, but their appearance can be very similar.

**Life-stage of onset?**

- Childhood
- Adulthood

**Cuticular drusen present?**

- No
- Yes

**EOG**

- Abnormal
- Normal

What does EOG stand for?

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Life-stage of onset?
Childhood, Adulthood

Cuticular drusen present?
No, Yes

EOG abnormal?
Yes, No

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Wet ARMD DDx

- Life-stage of onset?
- Childhood Adulthood
- Cuticular drusen present?
- No Yes
- EOG abnormal?
- Yes No


In a nutshell, what does an electro-oculogram measure? RPE function.

Again in a nutshell, how does it work? The resting potential of the RPE is measured in both the light- and dark-adapted states, and a ratio of the two resting potentials is calculated.

What is this ratio called? The Arden ratio.

What is the normal range for the Arden ratio? 1.9-2.8.

At what value is the Arden ratio considered definitely abnormal? Below 1.7 (it’s usually <1.5 in Best disease, and ratios as low as 1.1 are not uncommon).
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**Dry ARMD DDx**
- Pattern dystrophy
- Macroaneurysms
- Cuticular drusen

**Wet ARMD DDx**
- Pattern dystrophy
- Macroaneurysms
- Cuticular drusen

**Vitelliform exudative macular detachment**

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Best disease

Are VEMD and Best dz related?
No, but their appearance can be very similar

Best dz VEMD

Life-stage of onset?
Childhood Adulthood

Cuticular drusen present?
No Yes

EOG abnormal?
Yes No

What does EOG stand for?
Electro-oculogram

In a nutshell, what does an electro-oculogram measure?
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- CSR
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Best disease

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**Life-stage of onset?**
- Childhood
- Adulthood

**Cuticular drusen present?**
- No
- Yes

**EOG abnormal?**
- Yes
- No

What does EOG stand for? Electro-oculogram

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**Dry ARMD DDx**

- Pattern dystrophy
- Cuticular drusen
- Vitelliform exudative macular detachment

**Wet ARMD DDx**

- Polypoidal choroidal vasculopathy
- CSR RPE change after CSR
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**What does EOG stand for?**

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**What is this ratio called?**

The Arden ratio

**What is the normal range for the Arden ratio?**

1.9-2.8

- Life-stage of onset? Childhood
- Age of diagnosis? Childhood
- Cuticular drusen present? No
- EOG abnormal? Yes

**What does EOG stand for?**

Electro-oculogram

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RPE function

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This is the combined DDx for both dry and wet ARMD—divide it into the respective differentials

Non-Best pts

EOG
Dry ARMD DDx

- Pattern dystrophy
- Macroaneurysms
- Cuticular drusen

Vitelliform exudative macular detachment

Polypoidal choroidal vasculopathy

CSR

RPE change after CSR

Small choroidal melanoma

Hydroxychloroquine toxicity

Wet ARMD DDx

- Pattern dystrophy
- Macroaneurysms
- Cuticular drusen

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Best disease

Are VEMD and Best dz related?

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Best dz VEMD

Life-stage of onset?

Childhood

Adulthood

Cuticular drusen present?

No

Yes

EOG abnormal?

Yes

No

What does EOG stand for?

Electro-oculogram

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Dry ARMD DDx

- Pattern dystrophy
- Macroaneurysms
- Cuticular drusen

Wet ARMD DDx

- Vitelliform exudative macular detachment
- Polypoidal choroidal vasculopathy
- CSR RPE change after CSR
- Small choroidal melanoma
- Hydroxychloroquine toxicity

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Best disease

Are VEMD and Best dz related?
No, but their appearance can be very similar.

Best dz VEMD

**Life-stage of onset?**
Childhood

**Cuticular drusen present?**
No

**EOG abnormal?**
Yes

What does EOG stand for?
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**In a nutshell, what does an electro-oculogram measure?**
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**Dry ARMD DDx**
- Pattern dystrophy
  - Cuticular drusen

**Wet ARMD DDx**
- Macroaneurysms
- Vitelliform exudative macular detachment
- Polypoidal choroidal vasculopathy
- Central serous chorioretinopathy

**Cuticular drusen/VEMD tl;dr**
Cuticular drusen can mimic dry ARMD.
Cuticular drusen can mimic dry ARMD.
Cuticular drusen can also lead to VEMD, which in turn...
This is the combined DDx for both dry and wet ARMD—divide it into the respective differentials.

Dry ARMD DDx
- Pattern dystrophy
- Macular drusen

Wet ARMD DDx
- Vitelliform exudative macular detachment
- Polypoidal choroidal vasculopathy
- Central serous chorioretinopathy
- RPE erosion/CSR

Cuticular drusen/VEMD tl;dr
Cuticular drusen can mimic **dry ARMD**. Cuticular drusen can also lead to VEMD, which in turn... can mimic **wet ARMD**.
This is the combined DDx for both dry and wet ARMD—
divide it into the respective differentials

**Dry ARMD DDx**
- Pattern dystrophy
- Cuticular drusen

**Wet ARMD DDx**
- Macroaneurysms
- Vitelliform exudative macular detachment
- Polypoidal choroidal vasculopathy
  - Central serous chorioretinopathy
  - RPE change after CSC
  - Small choroidal melanoma
  - Hydroxychloroquine toxicity
This is the combined DDx for both dry and wet ARMD—divide it into the respective differentials

Dry ARMD DDx
- Pattern dystrophy
- Cuticular drusen

Wet ARMD DDx
- Macroaneurysms
- Vitelliform exudative macular detachment
- Polypoidal choroidal vasculopathy
- Central serous chorioretinopathy
- RPE change after CSC
- Small choroidal melanoma
- Hydroxychloroquine toxicity
This is the combined DDx for both dry and wet ARMD—divide it into the respective differentials

Dry ARMD DDx
- Pattern dystrophy
- Cuticular drusen

Wet ARMD DDx
- Macroaneurysms
- Vitelliform exudative macular detachment
- Polypoidal choroidal vasculopathy
- Central serous chorioretinopathy

How does polypoidal choroidal vasculopathy (PCV) present?

Yes, females are more likely to be affected
Yes, individuals of (East) Asian and African heritage are more likely to be affected
Between 50 and 70 years of age
This is the combined DDx for both dry and wet ARMD—divide it into the respective differentials

**Dry ARMD DDx**
- Pattern dystrophy
- Cuticular drusen

**Wet ARMD DDx**
- Macroaneurysms
- Vitelliform exudative macular detachment
- Polypoidal choroidal vasculopathy
- Central serous chorioretinopathy

*How does polypoidal choroidal vasculopathy (PCV) present?*
With recurrent, multifocal serous/sanguineous detachments of the RPE
PCV. Multiple areas of subretinal hemorrhage are visible. They are surrounded by areas of yellow subretinal material which likely represents old hemorrhage. There is an acute subretinal hemorrhage OD.

PCV
How does polypoidal choroidal vasculopathy (PCV) present?
With recurrent, multifocal *serous/sanguineous* detachments of the RPE

Where does this fluid and blood come from?
This is the combined DDx for both dry and wet ARMD—divide it into the respective differentials.

**Dry ARMD DDx**
- Pattern dystrophy
- Cuticular drusen
- Central serous chorioretinopathy

**Wet ARMD DDx**
- Macroaneurysms
- Vitelliform exudative macular detachment
- Polypoidal choroidal vasculopathy

How does polypoidal choroidal vasculopathy (PCV) present?
With recurrent, multifocal **serous/sanguineous** detachments of the RPE.

Where does this fluid and blood come from?
It’s all in the name. The choroidal vasculature contains poly-poid terminal dilatations that leach serum and/or heme—hence, polypoidal choroidal vasculopathy.
This is the combined DDx for both dry and wet ARMD—divide it into the respective differentials

Dry ARMD DDx
- Pattern dystrophy
- Cuticular drusen

Wet ARMD DDx
- Macroaneurysms
- Vitelliform exudative macular detachment
- Polypoidal choroidal vasculopathy

How does polypoidal choroidal vasculopathy (PCV) present?
With recurrent, multifocal serous/sanguineous detachments of the RPE

Is there a gender predilection?
**Q/A**

This is the combined DDx for both dry and wet ARMD—divide it into the respective differentials

**Dry ARMD DDx**
- Pattern dystrophy
- Cuticular drusen
- Central serous chorioretinopathy

**Wet ARMD DDx**
- Macroaneurysms
- Vitelliform exudative macular detachment
- *Polypoidal choroidal vasculopathy*

**How does polypoidal choroidal vasculopathy (PCV) present?**
With recurrent, multifocal serous/sanguineous detachments of the RPE

**Is there a gender predilection?**
Yes, females are more likely to be affected

**During what age range does it typically present?**
Between 50 and 70 years of age
This is the combined DDx for both dry and wet ARMD—divide it into the respective differentials

Dry ARMD DDx
- Pattern dystrophy
- Cuticular drusen

Wet ARMD DDx
- Macroaneurysms
- Vitelliform exudative macular detachment
- Polypoidal choroidal vasculopathy

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Is there a racial predilection?
How does polypoidal choroidal vasculopathy (PCV) present?
With recurrent, multifocal serous/sanguineous detachments of the RPE

Is there a gender predilection?
Yes, females are more likely to be affected

Is there a racial predilection?
Yes, individuals of East Asian and African heritage are more likely to be affected
This is the combined DDx for both dry and wet ARMD—divide it into the respective differentials

Dry ARMD DDx
- Pattern dystrophy
- Cuticular drusen
- Central serous chorioretinopathy

Wet ARMD DDx
- Macroaneurysms
- Vitelliform exudative macular detachment
- Polypoidal choroidal vasculopathy

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Is there a gender predilection?
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What percentage of cases of presumed wet ARMD are actually PCV in:
- Whites?
- East Asians?

No more than about 5%
Estimates run as high as an astonishing 50%!
This is the combined DDx for both dry and wet ARMD—divide it into the respective differentials

**Dry ARMD DDx**
- Pattern dystrophy
- Cuticular drusen

**Wet ARMD DDx**
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**Wet ARMD DDx**
- Polypoidal choroidal vasculopathy
- Central serous chorioretinopathy
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- Cuticular drusen

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- Vitelliform exudative macular detachment
- Polypoidal choroidal vasculopathy

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During what age range does it typically present?
This is the combined DDx for both dry and wet ARMD—divide it into the respective differentials

**Dry ARMD DDx**
- Pattern dystrophy
- Cuticular drusen
- Central serous chorioretinopathy

**Wet ARMD DDx**
- Macroneurysms
- Vitelliform exudative macular detachment
- Polypoidal choroidal vasculopathy

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Between 50 and 70 years of age
How does polypoidal choroidal vasculopathy (PCV) present?
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Yes, females are more likely to be affected

Is there a racial predilection?
Yes, individuals of (East) Asian and African heritage are more likely to be affected

During what age range does it typically present?
Between 50 and 70 years of age

How is PCV diagnosed?
Because of its ability to image the choroidal circulation, ICG angiography is probably the most useful test in making the dx. FA and OCTA can be contributory as well.

How is it treated?
Anti-VEGF agents are effective, especially in conjunction with photodynamic therapy (PDT).
How is PCV diagnosed?
Because of its ability to image the choroidal circulation, ICG angiography is probably the most useful test in making the dx.

Yes, individuals of (East) Asian and African heritage are more likely to be affected.

During what age range does it typically present?
Between 50 and 70 years of age.

This is the combined DDx for both dry and wet ARMD—divide it into the respective differentials.
How does polypoidal choroidal vasculopathy (PCV) present?
With recurrent, multifocal serous/sanguinous detachments of the RPE

Is there a gender predilection?
Yes, females are more likely to be affected

Is there a racial predilection?
Yes, individuals of East Asian and African heritage are more likely to be affected

During what age range does it typically present?
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How is PCV diagnosed?
Because of its ability to image the choroidal circulation, ICG angiography is probably the most useful test in making the dx

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Dry ARMD DDx
Pattern dystrophy
Cuticular drusen

Wet ARMD DDx
Macroaneurysms
Vitelliform exudative macular detachment
Polypoidal choroidal vasculopathy
Central serous chorioretinopathy

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**Wet ARMD DDx**

- Pattern dystrophy
- Macroaneurysms
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**How is it treated?**
Anti-VEGF agents are effective, especially in conjunction with photodynamic therapy (PDT).

**Dry ARMD DDx**

- Pattern dystrophy
- Macroaneurysms
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**What does ICG stand for in this context?**
Indocyanine green.

**Under what circumstance is ICG angiography preferred over FA?**
When one is primarily concerned with visualizing the choroidal circulation.

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Why is ICG superior to fluorescein for imaging the choroidal circulation?
Fluorescein diffuses rapidly through choroidal vessels, rendering them hard to visualize. In contrast, ICG is almost completely protein-bound in circulation, and thus will not diffuse across normal choroidal vessels. This renders ICG ideal for visualizing pathology of the choroidal vasculature.
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PCV: ICGA. Note the characteristic lesion: a choroidal vascular network of vessels ending in aneurysmal, polyp-like bulges

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Ocular coherence tomography angiography.
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In a nutshell, what is the pathophysiology of CSC?

Choroidal hyperpermeability + impaired RPE barrier function \(\rightarrow\) serous retinal detachment(s)

How does CSC present?

With visual dysfunction—decreased VA, dyschromatopsia, metamorphopsia, etc

Who is the typical pt?

A male between the ages of 35 and 55 who has a so-called Type A personality

What is the preferred treatment?

PDT
Dry ARMD DDx

Pattern dystrophy
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**Wet ARMD DDx**
- Macroaneurysms
- Vitelliform exudative macular detachment
- Polypoidal choroidal vasculopathy
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- RPE change after CSC
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RPE change after CSC

After CSC (especially chronic CSC), the RPE can acquire a ‘granular’ appearance that mimics dry ARMD
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For what it’s worth: The Retina book spends more time discussing CSC as a mimic of both forms of ARMD than it does any other cause!
Is it CSC or wet ARMD? An important distinction to make—can you make it?

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Is it CSC or wet ARMD? An important distinction to make—can you make it?

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In the context of CSC, what are descending tracts?
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In the context of CSC, what are descending tracts? Long, narrow areas of RPE change extending inferiorly from the areas of SRF.
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CSC: Descending tracts
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*In the context of CSC, what are descending tracts?*
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*By what other name is this phenomenon known?*
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‘Guttering’