Q

'Intraocular foreign body'

- Match each finding with the appropriate IOFB (some will be used more than once)
  - Minimal reactivity unless very large (2)

(number of answers)

Iron

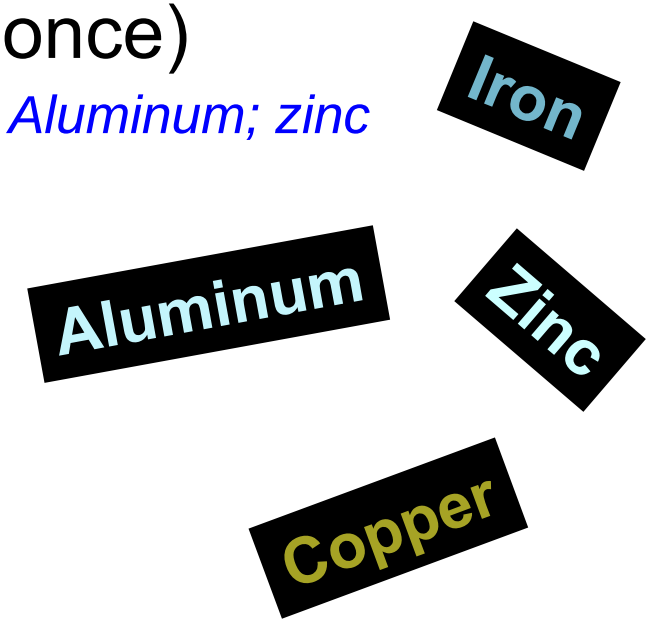
Aluminum

Zinc

Copper

A

- Match each finding with the appropriate IOFB (some will be used more than once)
  - Minimal reactivity unless very large (2) *Aluminum; zinc*



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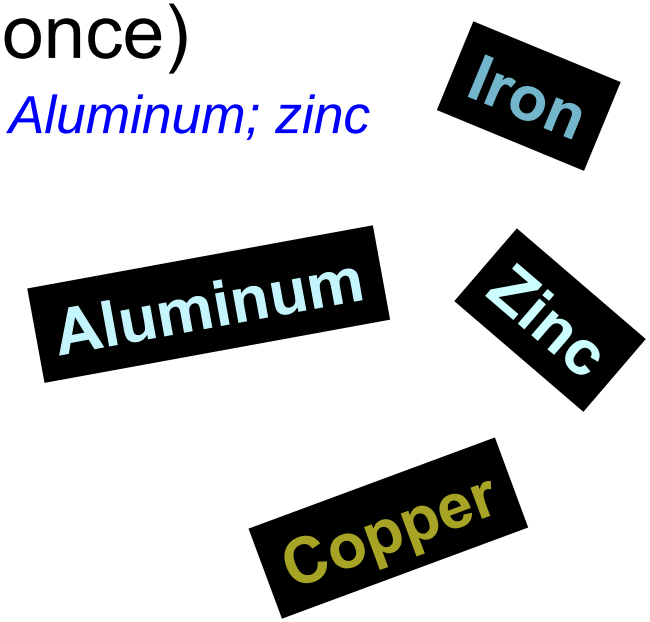
  - Minimal reactivity unless very large (2) *Aluminum; zinc*
  - Causes chalcosis



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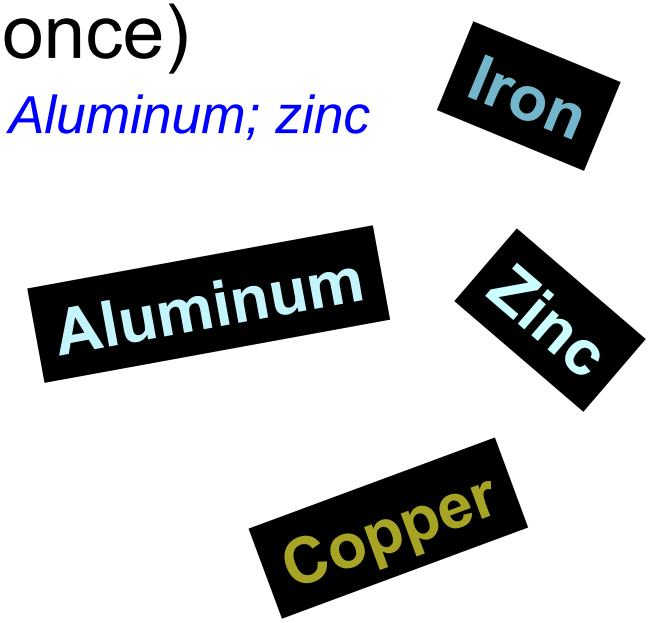

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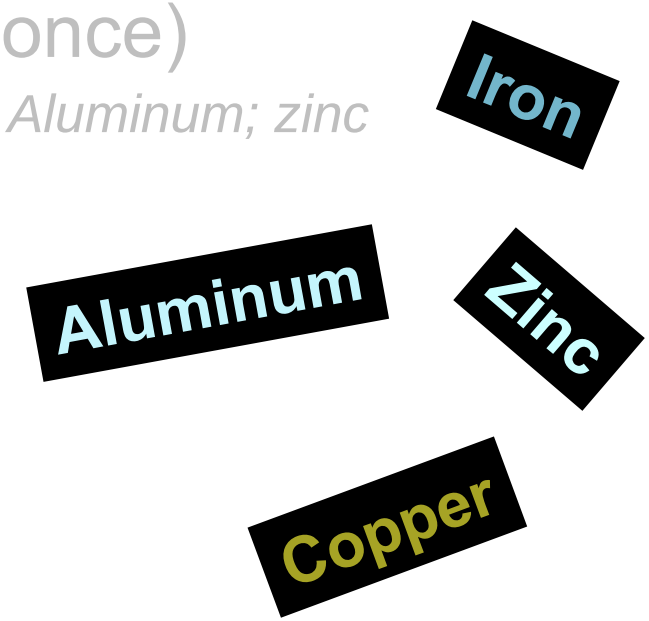
- Match each finding with the appropriate IOFB (some will be used more than once)
  - Minimal reactivity unless very large (2) *Aluminum; zinc*
  - Causes **chalcosis** ***Copper***

Pure copper causes **chalcosis**—a severe inflammatory response that can result in loss of the eye. Late removal of the IOFB may not resolve the chalcosis.



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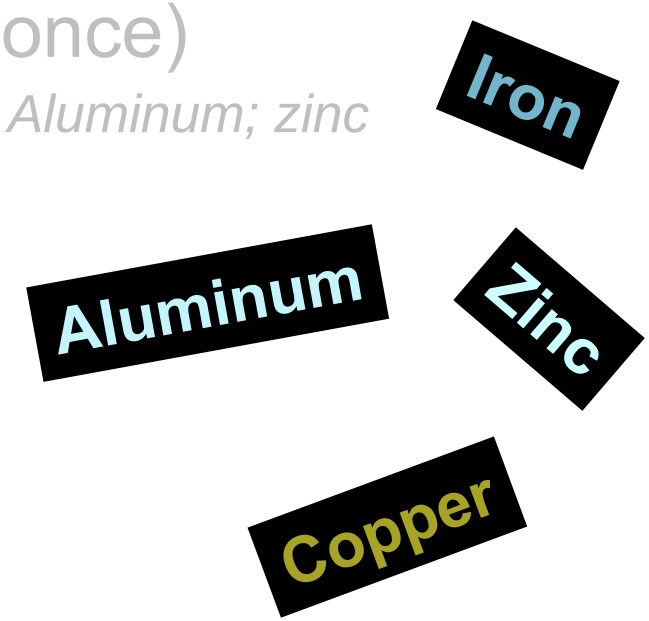

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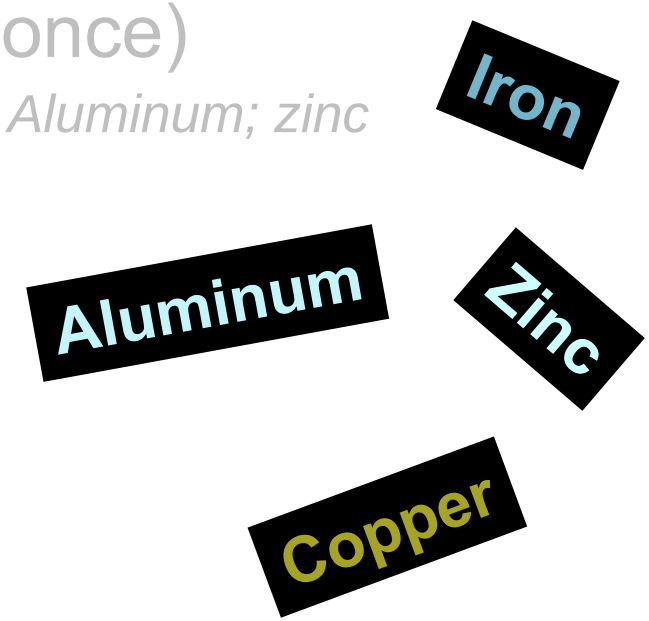

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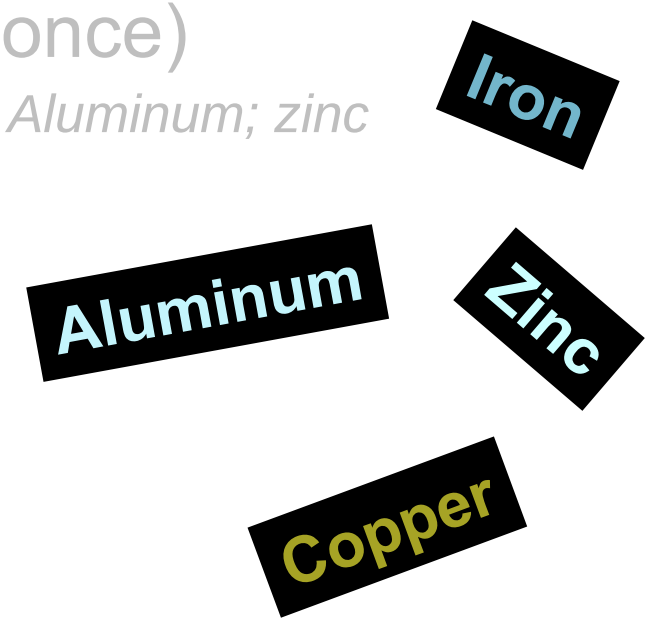

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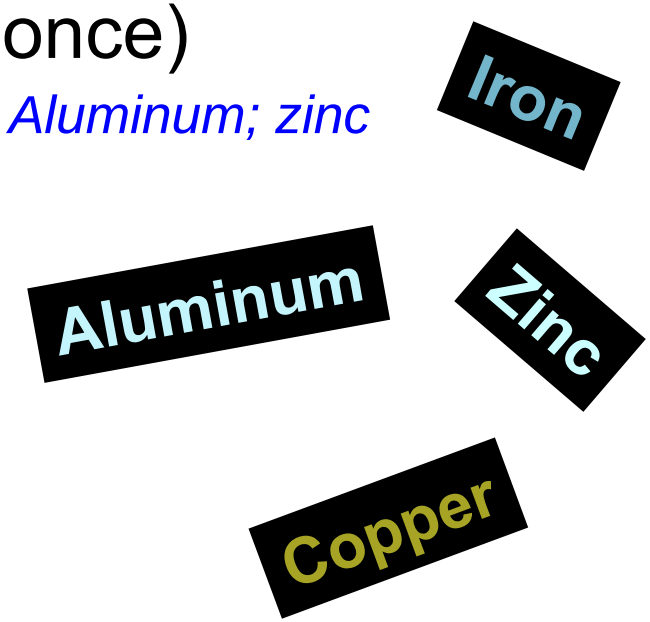
  - Causes chalcosis *Copper*
  - Has affinity for epithelial tissue



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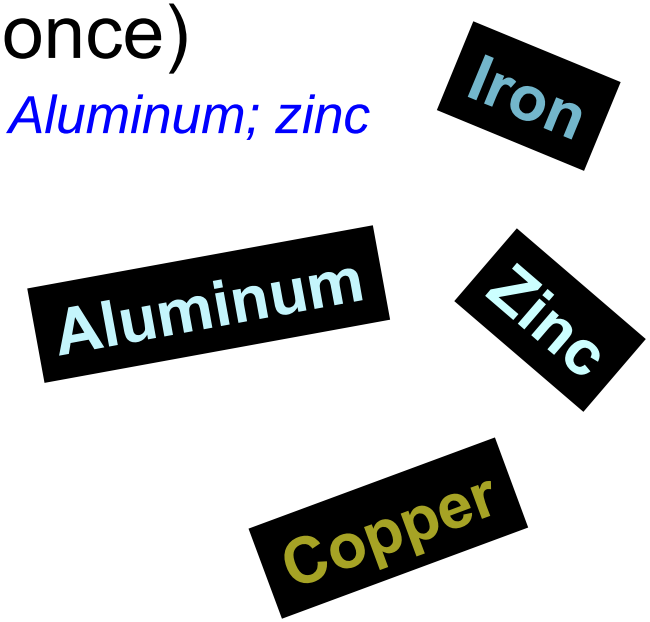

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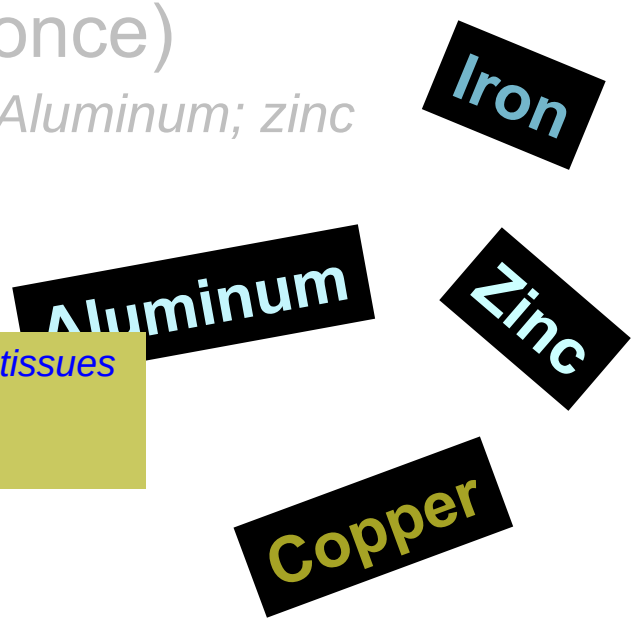
Does iron's affinity for depositing and concentrating in epithelial tissues includes the RPE?



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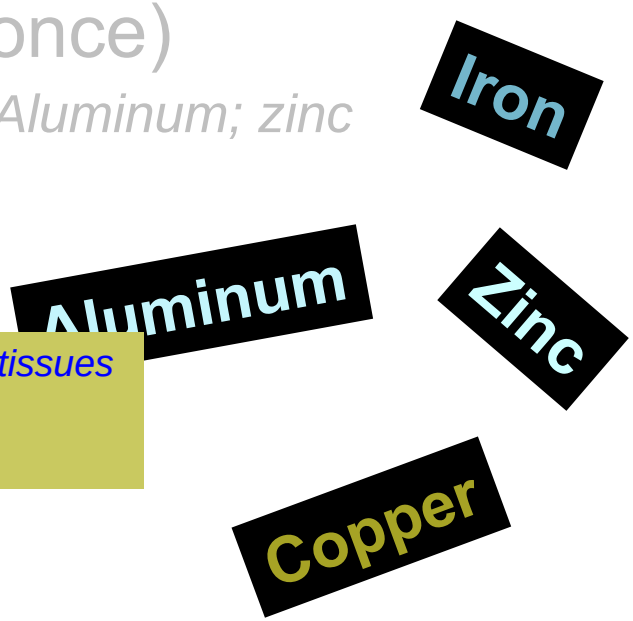

Does iron's affinity for depositing and concentrating in epithelial tissues includes the RPE?
Yes, and this accounts for a significant portion of its effects

Q

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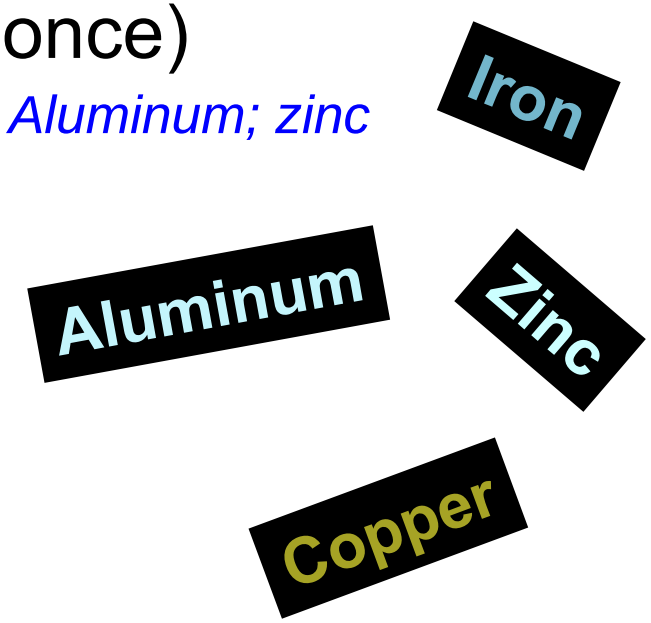
  - Has affinity for Descemet's



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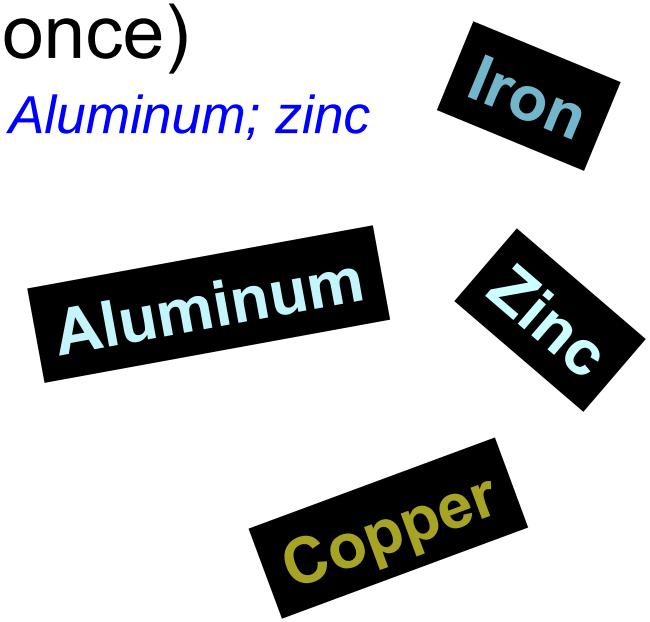

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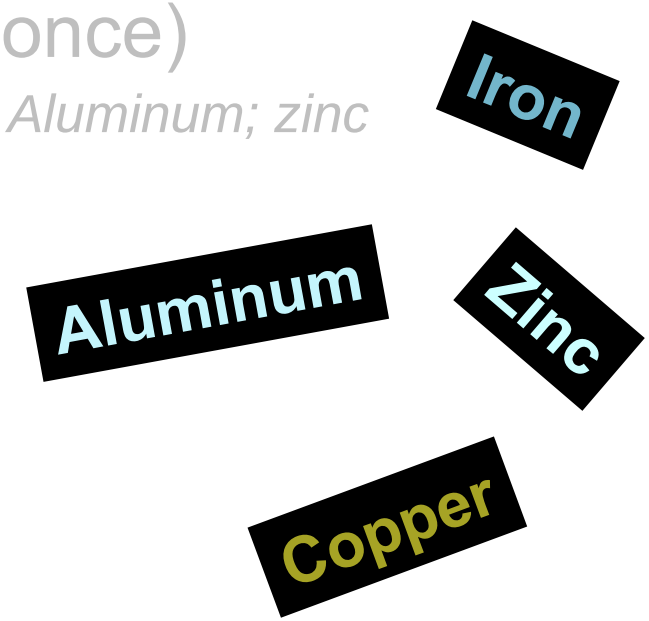
What affect does copper have on Descemet's?



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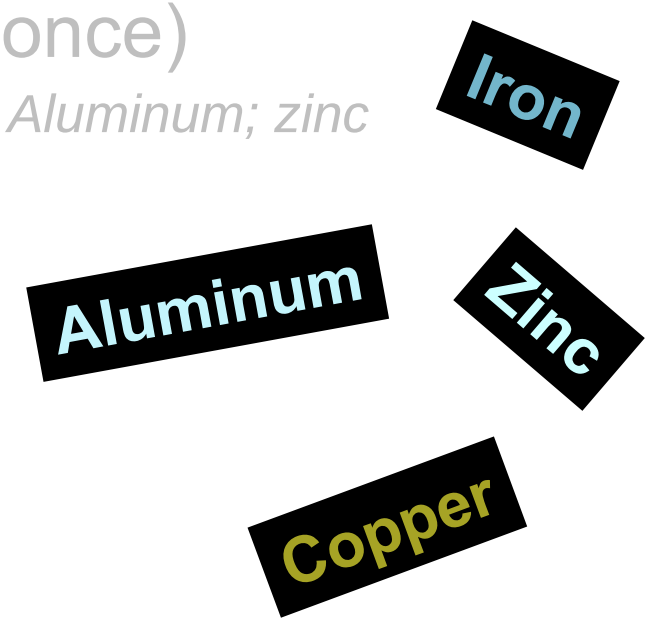
What affect does copper have on Descemet's?
It turns it a shade of **green**



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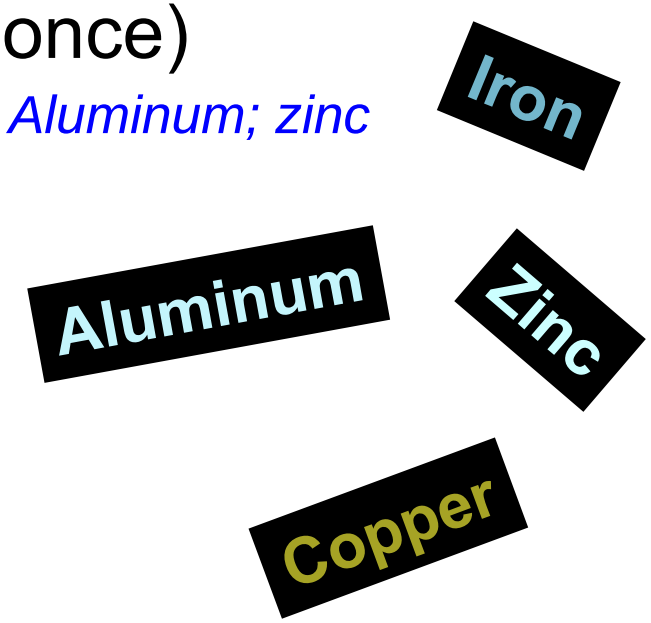

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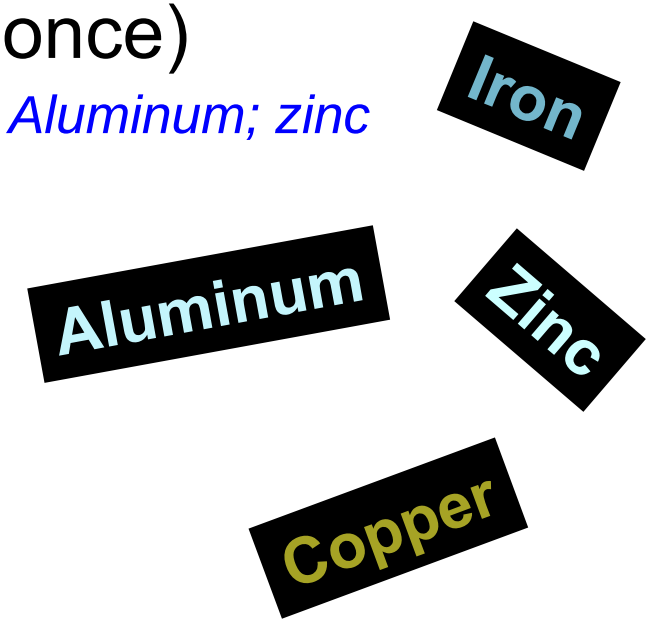

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Iron

Aluminum

Zinc

Copper

What is hemosiderosis?

A

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What is hemosiderosis?
The iron-caused discoloration of ocular tissues following an intraocular bleed

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The iron-caused discoloration of ocular tissues following an intraocular bleed

What is the cause?

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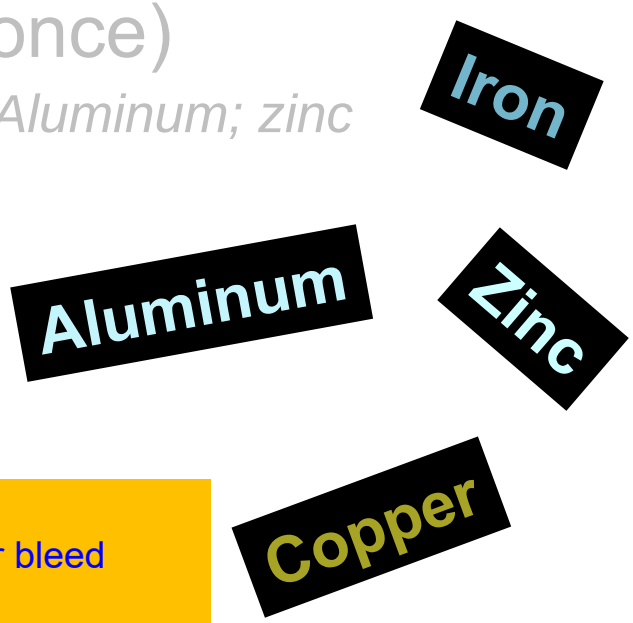

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The iron-caused discoloration of ocular tissues following an intraocular bleed

What is the cause?
The breakdown of RBCs with subsequent release of iron-containing hemoglobin

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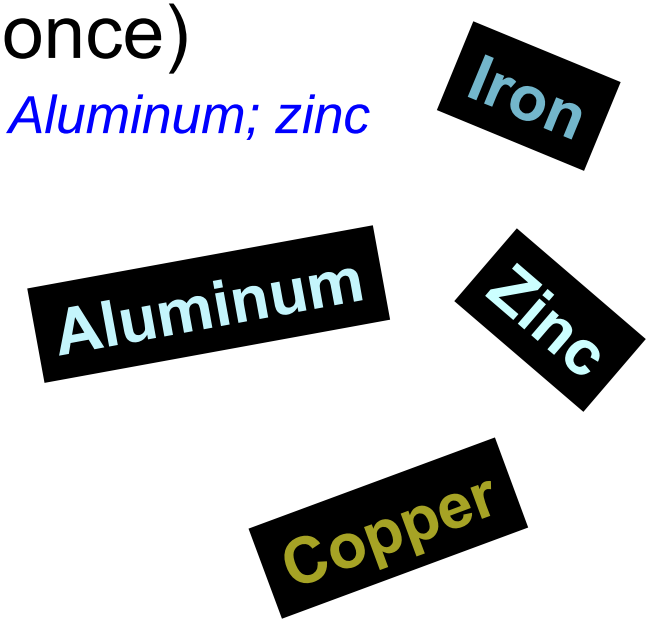

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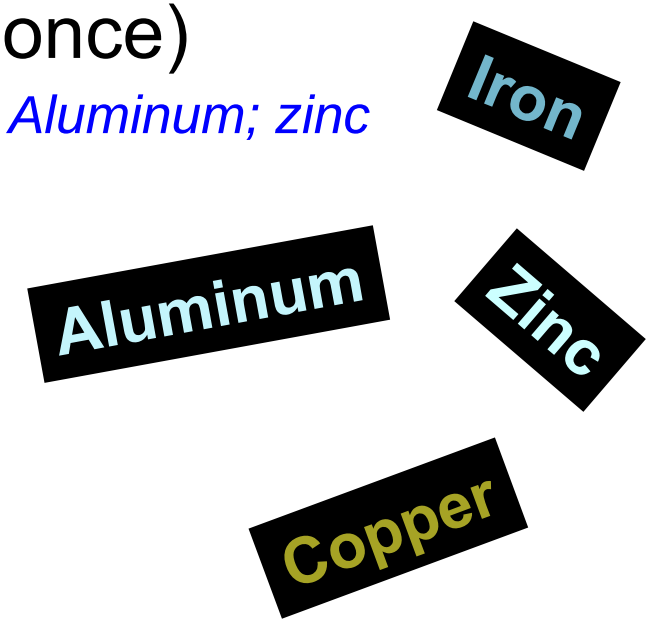

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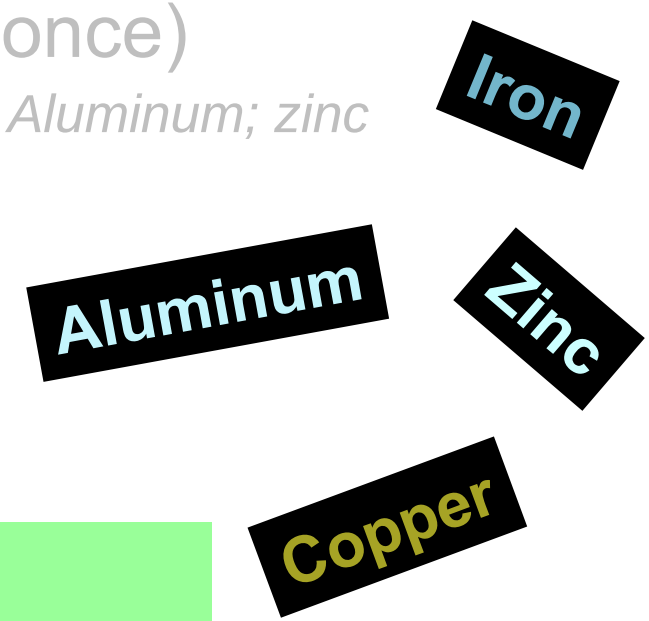

What are the effects on the iris of intraocular…
Copper?
Iron?

Q/A

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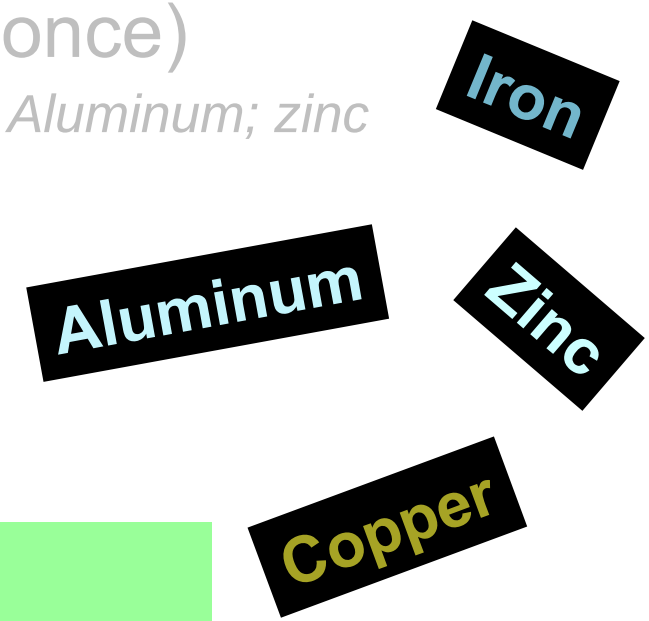

What are the effects on the iris of intraocular…
Copper? A greenish discoloration
Iron?

Q/A

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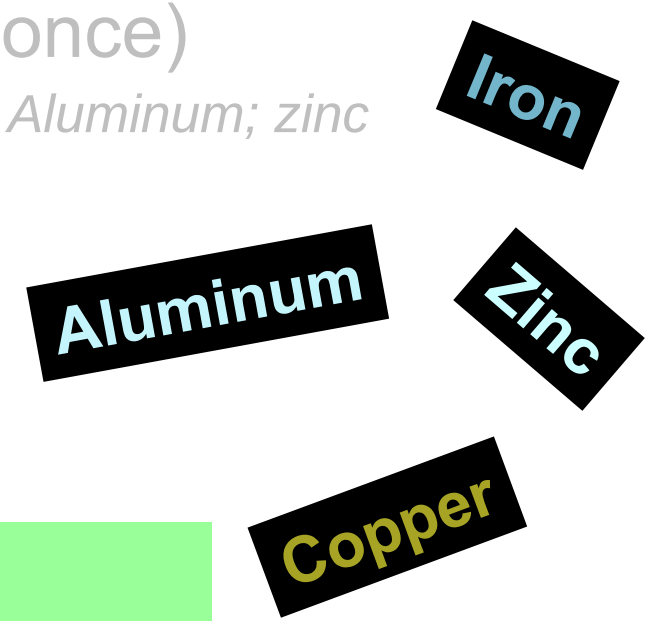

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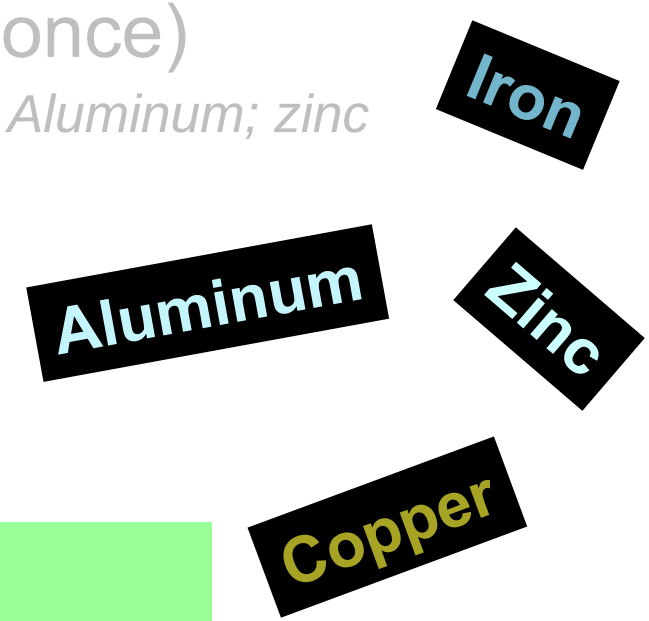

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Iron? Two effects deserve mention:
--darkening, with subsequent heterocheromia iridis (Be sure to ask about a hx of ocular trauma in any pt with heterochromia iridis!)
--iron deposition in the iris dilator and sphincter muscles impairs motility, resulting in a poorly-responsive pupil not unlike an [two words])

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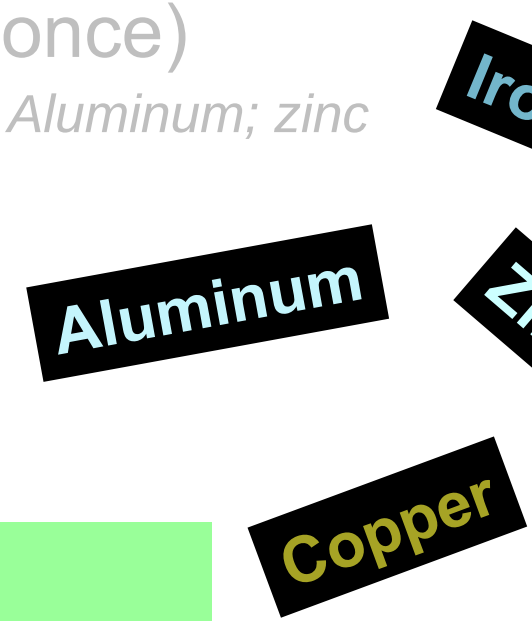

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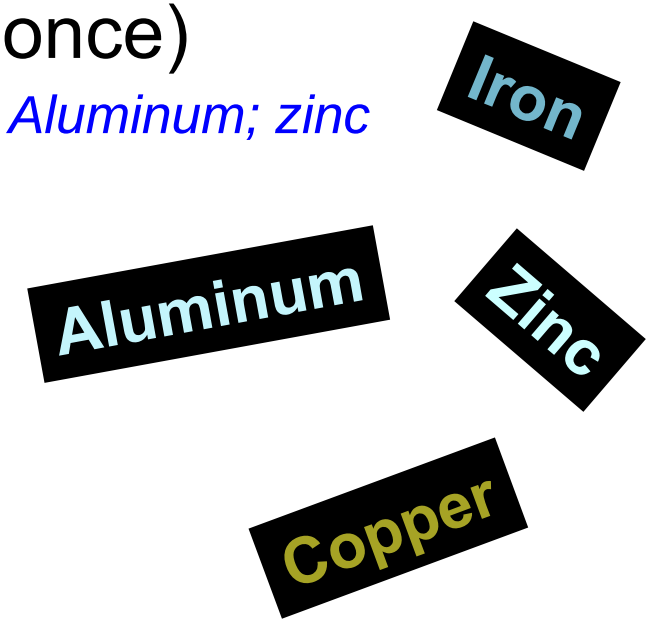
  - Causes *siderosis* *Iron*
  - Can affect the iris (2) *Iron; copper*
  - Can affect the lens (2)



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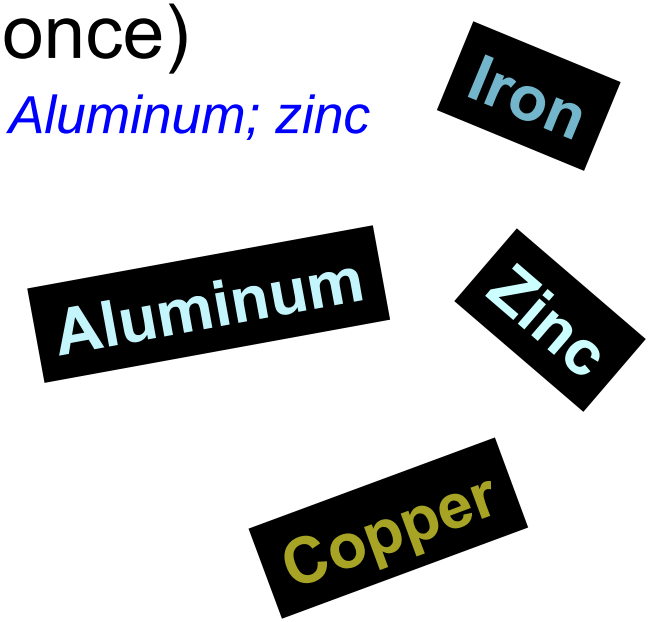

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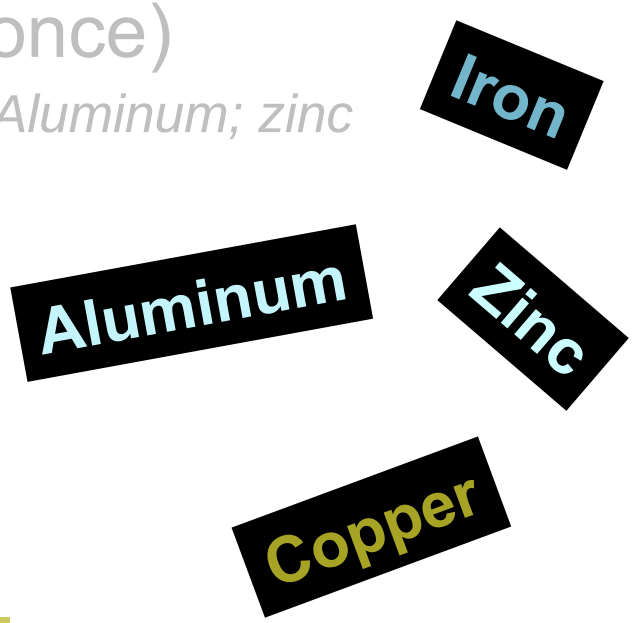

What are the effects on the lens of intraocular…
Copper?
Iron?

Q/A

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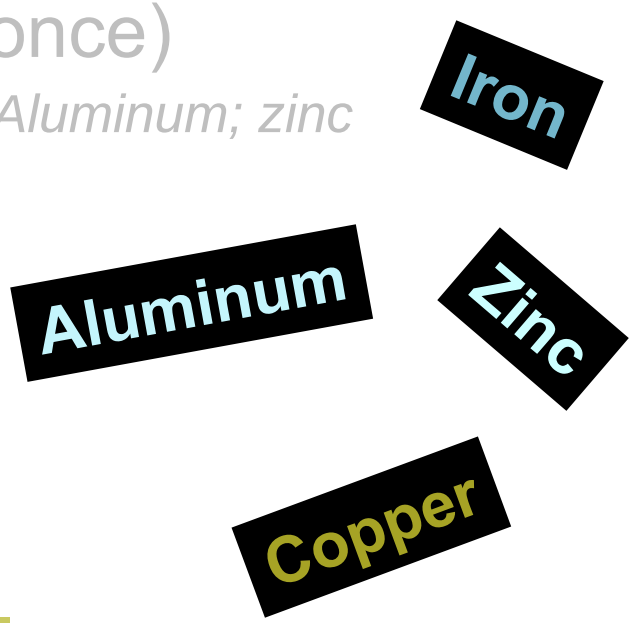

What are the effects on the lens of intraocular…
Copper? Causes so-called [redacted] cataracts
Iron?

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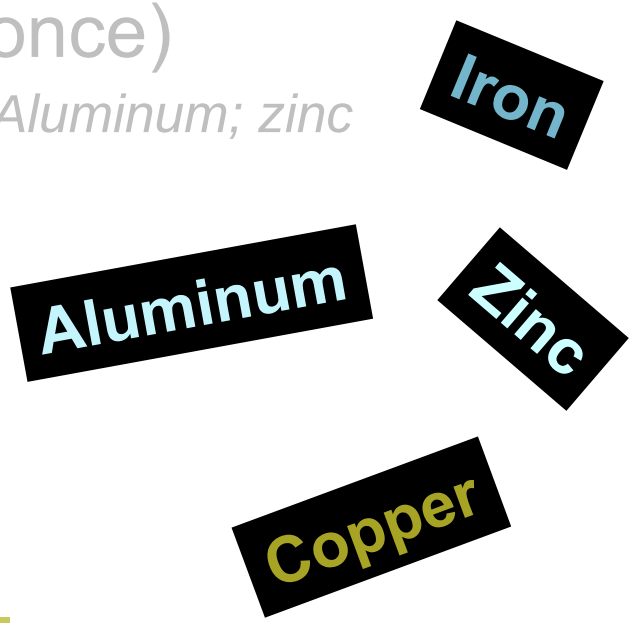

What are the effects on the lens of intraocular…
Copper? Causes so-called '**sunflower**' cataracts
Iron?

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  - Can affect the iris (2) *Iron; copper*
  - **Can affect the lens (2) *Iron; copper***

Iron

Aluminum

Zinc

Copper

What are the effects on the lens of intraocular Copper? Causes so-called **'sunflower' cataracts**
Iron?

Why the descriptor 'sunflower'?

A

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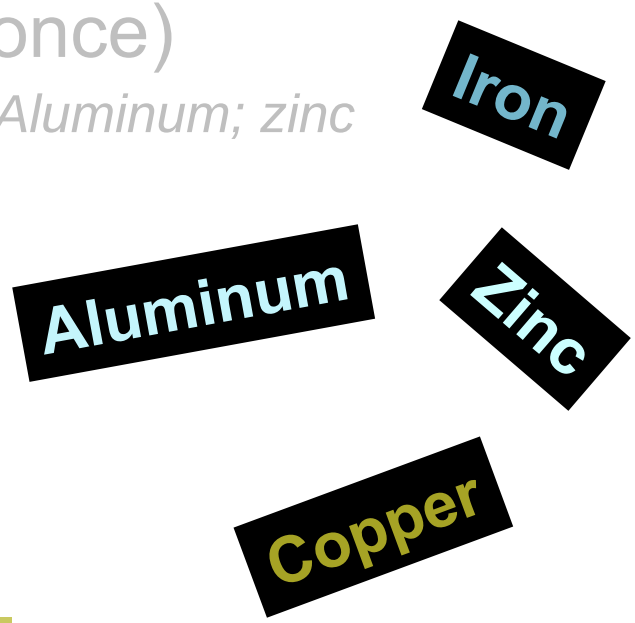
  - Can affect the iris (2) *Iron; copper*
  - **Can affect the lens (2) *Iron; copper***



What are the effects on the lens of intraocular Copper? Causes so-called **'sunflower' cataracts**
Iron?

Why the descriptor 'sunflower'?
Because of the cataract's petal-shaped contour, and the fact that it often has a **yellow hue**

Q

- Match each finding with the appropriate IOFB (some will be used more than once)
  - Minimal reactivity unless very large (2) *Aluminum; zinc*
  - Causes chalcosis *Copper*
  - Has affinity for epithelial tissue *Iron*
  - Has affinity for Descemet's *Copper*
  - Causes *siderosis* *Iron*
  - Can affect the iris (2) *Iron; copper*
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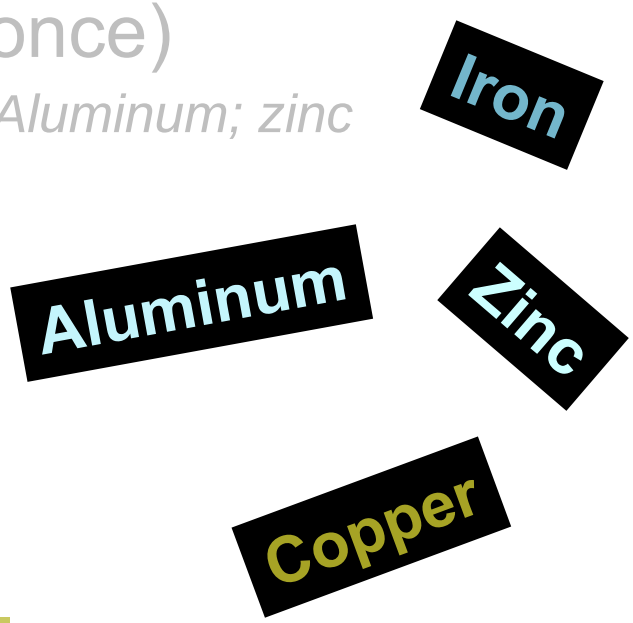

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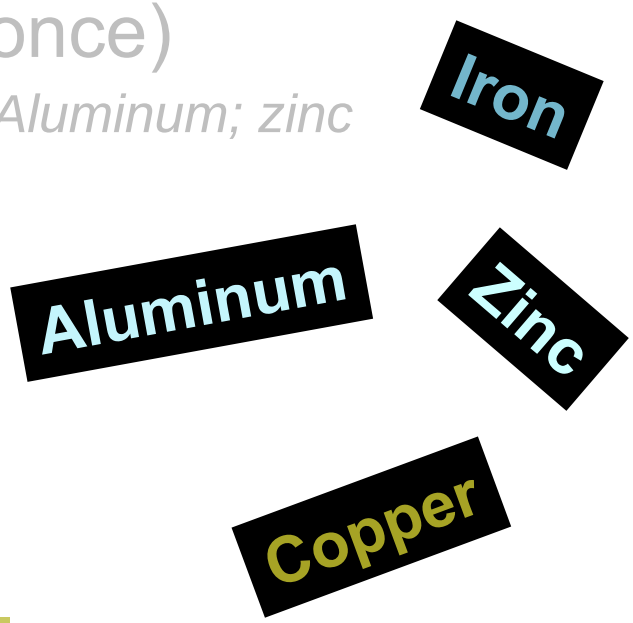

What are the effects on the lens of intraocular…
Copper? Causes so-called '**sunflower**' cataracts
Iron? **Brownish** discoloration of the lens **capsule**

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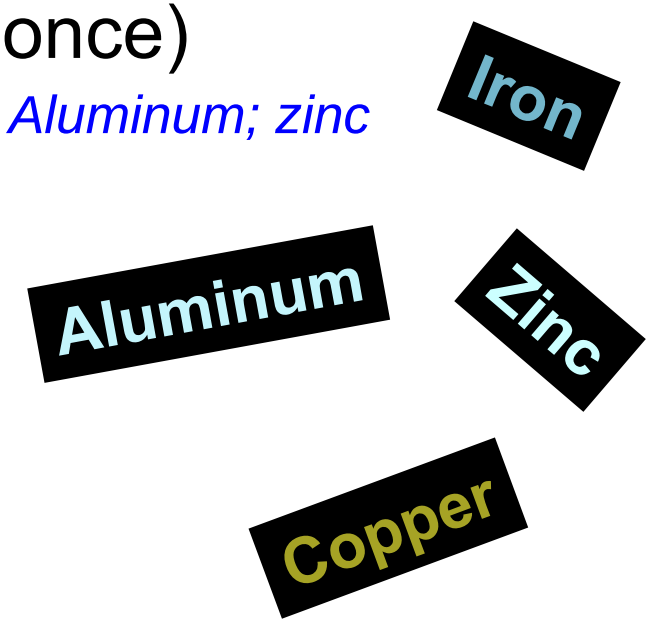
  - Causes nyctalopia *Iron*



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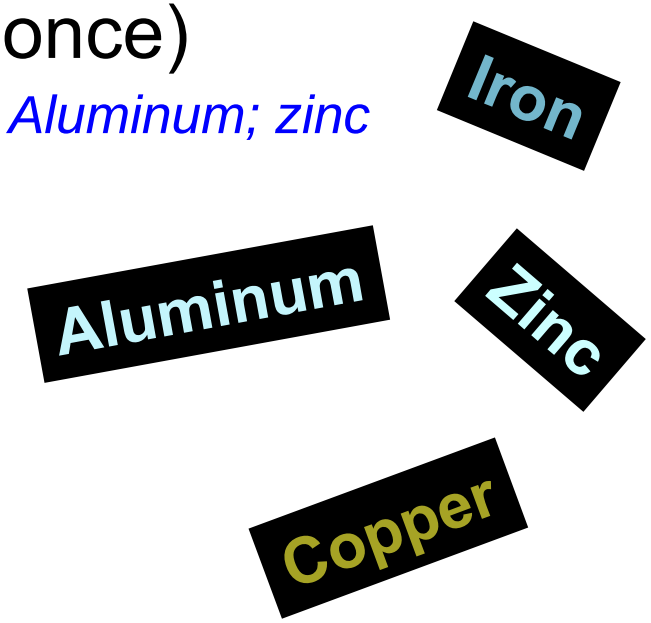
  - Causes an increase in the *a*-wave on ERG



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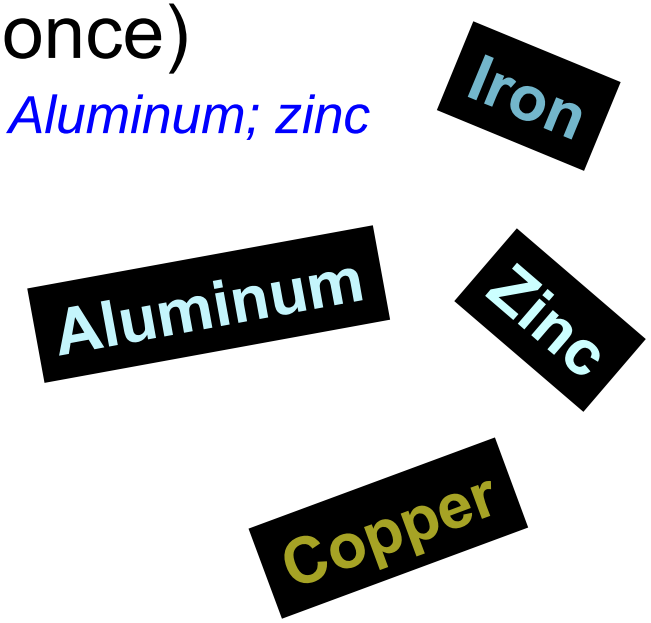

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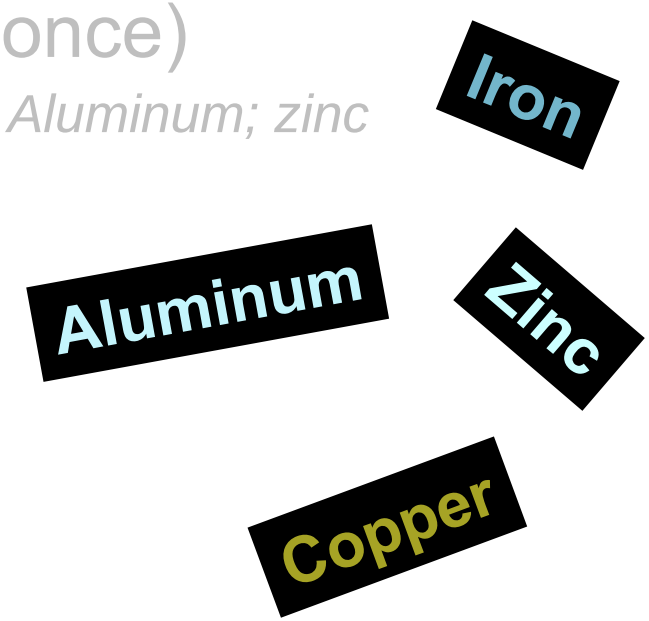

Iron tends to deposit in epithelial tissues, including the RPE. Deposition in the retina and RPE leads to nyctalopia as well as decreased acuity and VF loss. ERG changes are common: The first is an increase in *a*-wave amplitude, with a normal *b*-wave. Later the b-wave starts to diminish; late, the ERG becomes extinguished. An iron IOFB can be followed via serial ERG, with removal if the *b*-wave starts to decrease.