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Glands of the Orbit *(but not that one)*

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**OK, but how does this cause tear dysfunction?**
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OK, but how does this cause tear dysfunction? By contaminating the mucin layer, these polar lipids disrupt its ability to stabilize the tear film, leading to early tear-film break-up.
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And how does this cause tear dysfunction? As the melting temp approaches or exceeds ocular surface temp, the meibum will become more viscous (and thus resistant to excretion). This leads to a vicious cycle of deleterious effects.
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What is the vicious cycle involving altered meibum lipids?

altered lipids → effect of increased viscosity
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What systemic drug used to manage MGD/DES works by blocking bacterial lipase activity?

Doxycycline (and similar tetracycline derivatives)

In addition to blocking bacterial lipase activity, what other salutary effect does doxy have with respect to DES?

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Actually no--they’re probably only minimally contributory to its effects. But there is another effect worth mentioning…
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In the present context, what does MMP stand for?

**Matrix metalloproteinase**

What is MMP-9?

A pro-inflammatory cytokine released by distressed corneal epithelial cells.
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What are the side effects of doxy? --Photosensitivity: patients should avoid prolonged sun exposure --GI upset: Diarrhea is common --and the classic eye-related side effect: Idiopathic intracranial HTN
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**How many MGs are we talking about for each lid?**
- **Uppers:** (looking for a range here)
- **Lowers:** (ditto)
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How many MGs are we talking about for each lid?
--Uppers: 30-40
--Lowers: 20-30
The meibomian glands are embedded within the tarsal plate. The product of a meibomian gland is called *meibum*. The product of a sebaceous gland is called *sebum*. How do these differ (other than in their gland of origin)? Meibum has a much lower concentration of polar triglycerides and free fatty acids than does sebum. Also, meibum has a lower melting point (≤ to ocular surface temp). There are up to twice as many meibomian glands in the upper lids, which probably accounts for the increased risk of getting chalazia there. What are the glands of Krause and Wolfring? The accessory lacrimal glands.
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