

## Allergic Conjunctivitis or GPC

Giant Papillary Conjunctivitis, better known as GPC, is an allergic reaction most commonly associated with contact lens wear, especially soft contact lenses. Other conditions that have a foreign body rubbing under the upper eyelid can also cause this condition (such as an eroding scleral buckle initially placed to repair a retinal detachment, a loose suture, or severe allergies). GPC is an inflammatory condition; it is not infectious.

Patients usually present to the clinic with complaints of itching and irritation, worse when the contacts are removed. Often they'll complain about the contacts sticking and moving about, so their vision is not as stable as it once was. When the contacts are removed, a sandy sensation with a mild discharge and blurry vision are described.



*Contact lens deposits*



*GPC under upper eyelid*

Diagnosis is made by the patient's history and by the clinical examination using a slit lamp. GPC results in many deposits on the contact lenses. Also, when the patient's upper lid is inverted, the telltale bumps (papillae) are noted. These bumps look like a cobblestone pathway.

When a patient gets GPC, it is often due to contact lens over-wear or dirty contact lenses, and occasionally due to a damaged contact lens (torn or warped). A misfit contact can also cause the problem; for example, if a contact is too tight. If one of these problems is present, deposits form more readily on the anterior (front) surface of the contact lens.

Toric contact lenses are more notorious than standard contact lenses for causing GPC due to their increased thickness, and less frequent replacement. It is especially important to enzyme clean all contacts lenses (hard and soft), along with mechanical cleaners to debride them of any deposits.

The protein deposits on the lenses become denatured (unwound; changed configuration). Denatured proteins are no longer recognized as "self" but rather as "foreign" (invading) proteins. The body attacks these "foreign" proteins by making antibodies (at the sites of the bumps). These proteins are secreted into the tear film, and end up sticking to the contact lens (adding to the deposits), which in turn continues to rub under the upper eyelid. This is a cyclic problem that escalates over time.

Treatment involves stopping contact lens usage and using topical eye drops. The most important is stopping the contact lens, since the mechanical rubbing is what perpetuates the problem. In fact, if not stopped, the GPC will become worse due to the cyclic nature of GPC.

The eye drops, usually a mast-cell stabilizer or weak steroid, reduce the inflammation. The bumps or papillae gradually decrease in size. However, the signs of GPC may continue for several weeks or months. Success of treatment is based more on the patient's symptoms than the papillae.

Occasionally, a patient needs to have their contact lenses re-fit, or replaced with a different material (different plastic composition) that is more resistant to protein deposits in order to prevent recurrence. Daily wear contacts are the least prone to deposition. If these measures don't prevent recurrence, then glasses or refractive surgery should be considered.