Ocular surface (OS) represents a recent entity, newly redefined concerning its physiopathology. It appears to be a real crossroads in ophthalmology, been involved in many medical and surgical situations, such refractive surgery especially corneal excimer photoablation.

Indeed dry eye represents nowadays the most common complication after PRK and even more frequent after lasik. Related to the principle of these two procedures, the cause of ocular surface deregulation lies on neurotrophic disturbances (secondary to nerves section) and inflammation (that belongs to the wound healing process). In addition, changes in corneal shape, whatever the laser, can affect the tear dynamics with an increase in ocular surface dessication. All these phenomenon are systematically observed after photoablation for a transitory period of 1 to 3 months. But, sometimes, they do persist beyond one year, becoming chronic and source of a great discomfort and dissatisfaction.

Ocular dryness is actually reported in 20 up to 50 % of lasik in the form of functional ocular symptoms or even of visual decrease and fluctuations (10%). Preoperative dry eye constitutes a risk factor for postoperative severe dryness; that it why it appears crucial to detect and treat surface disorder before the surgery. More specific to lasik dry eye can favor persistent corneal defect, epithelial cell ingrowth, diffuse lamellar keratitis, refractive regression, infectious keratitis.

Is there a difference between surface PRK and Lasik? The maintenance of an intact epithelium in Lasik should allow a faster visual rehabilitation, less pain and healing response and potentially more stability (moderate ametropia). However hinged flap induced transection of large number of afferent sensory nerve fibers during lamellar cut that impacts the integrated lacrymal gland OS functional unit. Finally, Lasik is responsible of more dry eye syndrome that PRK; explaining that many surgeons would prefer to orientate a patient to a surface ablation in case of preoperative Ocular surface disorder.

We will remind the list and hierarchy of tests available for the assessment of ocular surface (in term of tear stability, tear production and staining). Unfortunately, values of the defined criteria are variable and there are a lot of variations in the methods. Moreover, the correlation between clinical symptoms and tests results is very poor. The access to tear osmolarity (using the TearLab©) could be an interesting new biomarker. A study will be presented showing that 44% of patients, candidates to Lasik have an asymptomatic dryness before surgery (mild to moderate stage). The measurement appears to be: easy, efficient, fast and non-invasive, well tolerated test for detecting ocular dryness. However, this measurement does belong only to university and could be useful for comparative dry eye treatment.

The strategy of treatment will be discussed, in graduating the medications according the growing severity including: non preservative artificial tears, 0.05% Cyclosporine A ( for severe dryness, used for its anti-inflammatory action), bandage soft contact lens (after PRK, carefully controlled), nutritional supplementation appears here very anecdotal when autologous serum does not have any indication. It is important to consider the treatment of associated Ocular surface conditions such blepharitis, ocular rosacae (lid hygiene, tetracycline), temporal punctual occlusion