One hundred and eleven years ago, O. Schirmer started to evaluate tear quantity and variations of his original methods are still widely used today. Schirmer described three procedures which all involved a strip of paper placed over the lower lid margin:

- **Schirmer I**: the eye is not anesthetized and the length of wetting is measured after five minutes.  
- **Schirmer II**: the eye is anesthetized, the nasal mucosa is stimulated with a brush, and the length of wetting is measured after five minutes.  
- **Schirmer III**: the eye is anesthetized, the patient is directed to look at the sun, and the length of wetting is measured after five minutes.  

Schirmer I and Jones' version of Schirmer II (which does not stimulate the nasal mucosa) are commonly performed today. Even though Schirmer's Test is popularly used in practice, there are many issues leading to inconsistent sensitivity, specificity, and repeatability:

- Contact with the eyelashes
- Amount of light
- Humidity
- Temperature
- Patient anxiety

All of these factors make it difficult to give exact normative values. However, a generally accepted value for an anesthetized test (like Jones' Schirmer II) is 10mm of wetting in five minutes. Standardized values for the un-anesthetized test are harder to find, or have a large variability. However, a 2010 study published in Cornea compared a two- and five-minute Schirmer test without anesthesia (Schirmer I) and found normal values to be 13mm in five minutes and 10mm in two minutes. The study concluded that the 2-minute test may be an alternative to the five-minute test saving the clinician time and providing more comfort for the patient.  

Schirmer’s test offers a relatively inexpensive way to measure tear quantity; however, there are many confounding factors that affect reliability. Hopefully future technology will offer more patient comfort, along with increased sensitivity, specificity, reliability and repeatability.  

References:

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