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## Divergence Insufficiency Esotropia Is a Misnomer:

In reply

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We thank Mittelman for his thoughtful comments emphasizing points that he has previously published.<sup>1</sup> We agree that the terms *divergence paralysis esotropia* (DPE) and *divergence insufficiency esotropia* are misnomers. In our article, we noted the existence of multiple terms for this form of strabismus and that we had used the term *DPE* to permit convenient reference to the prior literature.<sup>2</sup> We further agree with Mittelman that the term *age-related distance esotropia* (ARDE) is better suited than the foregoing terms to describe small-angle distance esotropia in older patients. However, is *ARDE* the optimal term for the field to adopt for future use? Changes in nomenclature are difficult owing to factors such as a large existing literature using older terms and the association of older terms with presumed pathophysiological mechanisms that may still be embraced by a large number of clinicians.<sup>3</sup> Optimal terminology should be descriptive of findings when pathophysiological mechanisms are unknown but should be related to mechanisms when mechanisms have been clearly demonstrated. The controversial consideration is the level of evidence necessary to persuade a professional field of the correctness of a particular mechanism vs that field's natural reticence to change longstanding practice. Even when there is overwhelming evidence of a particular mechanism, professionals tend to change nomenclature only slowly, often as generational replacement limits the rate of paradigm shift.<sup>4</sup>

In the case of DPE/ARDE, we believe that application of high-resolution magnetic resonance imaging has now unequivocally revealed the mechanism of the strabismus to be an involitional effect of orbital connective tissue degeneration, not a neurological deficit. Even another term, *sagging eye syndrome*, has been proposed,<sup>5</sup> for which DPE/ARDE is only one manifestation to which may be added aponeurotic blepharoptosis and cyclovertical strabismus.<sup>6</sup> We recently published findings that patients with DPE/ARDE nearly always have bilateral rupture of the lateral rectus–superior rectus band ligament that supports the lateral rectus muscle, along with lengthening and alteration in the paths of the rectus extraocular muscles.<sup>6</sup> These alterations reflect extremes of gradual effects of aging on orbital connective tissues and are not always limited to adults in the age range considered elderly.<sup>6</sup> Moreover, acute connective tissue rupture can even produce sudden-onset distance diplopia, simulating a neurological condition.

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We agree with Mittelman that as our population ages, ophthalmologists will increasingly encounter patients with esotropia limited to distance viewing. Mittelman has correctly recognized that DPE/ARDE is not a neurological disorder but is instead a mechanical disorder, and he has done a service to our patients by emphasizing that it does not involve a neurological deficit of divergence. Now that we know ARDE is one important manifestation of sagging eye syndrome, we agree that it would be appropriate to adopt Mittelman's suggested term *ARDE* in future studies.

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