

### **SUPPLEMENTARY SOURCE DATA 3**

#### **Activity and severity assessments for patients with Graves' orbitopathy (adapted from Bartalena et al, 2008).**

**(a) Activity measures based on the classical features of inflammation: clinical activity score (CAS) is the sum of all items present (Mourits et al, 1989). For patients assessed for the first time only items 1-7 are scored. A CAS  $\geq 3/7$  indicates active GO. For patients that are assessed for the second or subsequent time 1-3 months later, items 8-10 are also scored; a CAS  $\geq 4/10$  indicates active disease (Mourits et al, 1997).**

1. Spontaneous retrobulbar ache
2. Pain on attempted up or lateral gaze
3. Redness of the eyelids
4. Redness of the conjunctiva
5. Swelling of the eyelids
6. Inflammation of the caruncle and/or plica
7. Conjunctival oedema
8. Increase of 2 mm or more in proptosis in the last 1-3 months
9. Decrease in visual acuity in the last 1-3 months
10. Decrease in eye movements of  $8^{\circ}$  or more in the last 1-3 months

#### **(b) Severity measures**

Lid aperture (distance between the lid margins in mm with the patient looking in the primary position, sitting relaxed, and with distant fixation)

Swelling of the eyelids (absent/equivocal, moderate, severe<sup>1</sup>)

Redness of the eyelids (absent/present<sup>1</sup>)

Redness of the conjunctivae (absent/present<sup>1</sup>)

Conjunctival oedema (absent, present<sup>1</sup>)

Inflammation of the caruncle or plica (absent, present<sup>1</sup>)

Exophthalmos (measured in millimeter using the same Hertel exophthalmometer and same intercanthal distance for an individual patient)

Subjective diplopia score (0=no diplopia; 1=intermittent, i.e. diplopia in primary position of gaze, when tired or when first awakening; 2=inconstant,

i.e. diplopia at extremes of gaze; 3=constant, i.e. continuous diplopia in primary or reading position)

Eye muscle involvement (ductions in degrees; [www.eugogo.org](http://www.eugogo.org))

Corneal involvement (absent/punctate keratopathy/ulcer)

Optic nerve involvement (best-corrected visual acuity, color vision, optic disc, relative afferent pupillary defect (absent/present), plus visual fields if optic nerve compression is suspected)

### **(c) Severity classification**

#### Sight-threatening thyroid eye disease

Patients with dysthyroid optic neuropathy (DON) and/or corneal breakdown.

This category warrants immediate intervention.

#### Moderate-to-severe thyroid eye disease

Patients without sight-threatening disease whose eye disease has sufficient impact on daily life to justify the risks of immunosuppression (if active) or surgical intervention (if inactive). Patients with moderate-to-severe thyroid eye disease usually have any one or more of the following: lid retraction  $\geq 2$ mm, moderate or severe soft tissue involvement, exophthalmos  $\geq 3$  mm above normal for race and gender, inconstant or constant diplopia.

#### Mild thyroid eye disease

Patients whose features of thyroid eye disease have only a minor impact on daily life insufficient to justify immunosuppressive or surgical treatment. They usually have only one or more of the following: minor lid retraction ( $< 2$  mm), mild soft tissue involvement, exophthalmos  $< 3$  mm above normal for race and gender, transient or no diplopia, and corneal exposure responsive to lubricants.

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**REFERENCES**

*Bartalena L, et al. Eur J Endocrinol. 2008;158:273-85.*

*Mourits MP et al. Br J Ophthalmol 1989;73:639-644.*

*Mourits MP et al. Clin Endocrinol(Oxf) 1997;47:9-14.*

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<sup>1</sup> [http://www.eugogo.eu/clinical\\_evaluation.php](http://www.eugogo.eu/clinical_evaluation.php)