



**SportsVision
NETWORK**

www.sportsvisionnetwork.it

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SPORTS VISION



Appendix 3

Olympic Vision Centre, Lillehammer, 1994:

findings of the Bausch & Lomb survey*

During the 1994 Olympic Games in Lillehammer, Norway, Bausch & Lomb tested the visual skills of 342 athletes (92 females and 250 males) representing 46 countries and 12 sports groups. Athletes tested ranged in age from 16 to 41 (average age 25). The following provides data collected from visual performance history questionnaires and specific tests, as reported by Vittorio Roncagli, PhD, FAAO, co-founder of the European Academy of Sports Vision and chief consultant to the Olympic Vision Centre (OVC).

Previous eye examination

- More than 50% of the athletes have never received a complete visual examination. This finding is consistent with OVC data collected during the 1992 Olympic Games.
- None of the athletes tested in Lillehammer from Bulgaria, Greece, Hungary and Romania had previously ever received a complete vision examination.
- 58.3% of those who rated the importance of vision a '3' (with '5' being the most important) had never had a complete visual examination.

* After Bausch & Lomb (1994) with permission.

Injuries

- 18.42% of athletes examined said they had had an eye or head injury or trauma, or infection or surgery.
- The highest percentage of self-determined traumas was recorded for athletes of:
Freestyle (30% of athletes examined for this sport).
Ice-hockey (28% of athletes examined for this sport).

Contact lenses

- 15.5% said they wear contact lenses.
- 90.5% of lens wearers are using soft lenses.
- 94.3% of contact lens wearers use them for sports.
- 69.8% of lens wearers use them every day.

Glasses

- 19.59% said they wear spectacles.
- Only 3.2% said they use glasses for sports.

Vision training

- Only 4.6% said they followed a vision training programme.

Vision difficulties

- 18.1% of the athletes examined said they were currently experiencing visual difficulties.
- The highest percentage of visual difficulties were recorded for athletes of:
Nordic Combined (44% of athletes examined for this sport).
Alpine Ski (35% of athletes examined for this sport).

Static visual acuity

- 4.6% of athletes had binocular visual acuity below 20/20.
- 12.5% had visual acuity below 20/20 in one eye.

Visualization

- 36.8% of athletes examined said they use visualization/imagery techniques.
- The highest percentage of athletes using visualization were recorded for athletes of:
Short Track (67% of athletes examined for this sport).
Freestyle (63% of athletes examined for this sport).

Importance of vision during sports

- On a scale from 1 to 5 (with 5 being extremely important), 62.5% responded with '5'.
- The average rating for this question was 4.39.

- The highest rate was recorded for athletes of:
Ice-hockey (4.73)
Alpine Ski (4.71)
Biathlon (4.69).
- 90.5% of those using contact lenses rated the importance of vision with '4' or more.

Near stereopsis (18')

- Only 44.4% of athletes were able to discriminate all the stereoscopic targets at near.

Distance stereopsis

- 5.2% of athletes had no measurable stereopsis at 6 m.
- Only 36.8% of athletes were able to discriminate all the stereoscopic targets at 6 m.

Fixation disparity

- 2.9% of athletes had suppression of one eye during fixation disparity and stereopsis tests.
- 19.2% of athletes showed unstable fixation disparity.

Note: Since this behavior affects stereopsis, we may speculate that these athletes need specific vision care (either adjusted vision correction and/or vision training).

Accommodation/vergence flexibility

- 2 athletes (0.5%) were able to reach the amazing performance of 30 cycles in 30 seconds on the 20/80 target test. This test measures how quickly one can shift focus from near to far and back again.
- 4 athletes (1.1%) were not able to reach at least 10 cycles in 30 seconds.

Contrast sensitivity

- Only 4 athletes (1.1%) could discriminate all 8 targets (100% of targets).
- 5.8% of athletes significantly failed the test, not being able to discriminate an average of at least 4 targets (50% of targets).

Peripheral awareness time

- 24.8% of athletes tested had a significantly low average peripheral awareness time (time slower than 0.40 seconds), as compared to other elite athlete scores.
- 20.4% of athletes tested had a time better than 0.30 seconds.
- 4 athletes showed excellent performance (time better than 0.25 seconds).

Eye-hand reaction/response speed

- 15.4% of athletes tested performed very well (time below 0.20 s).
- On average, better performances were recorded for athletes in Ski Jump and Short Track.

Eye-foot reaction/response speed

- 6.7% of athletes tested performed very well (time below 0.21 s).
- Better performances were recorded for athletes in Alpine Ski and Ski Jump.