

# The Optometric Management of Concussion

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## INTRODUCTION

Each year an estimated 42 million individuals experience mild traumatic brain injury or concussion worldwide. Many of these individuals develop visual symptoms (Gardner and Yaffe, 2015). Optometrists play a prominent role in the management of patients with concussion-associated vision deficits and persistent concussion symptoms. At present, there is no optometric standard of care for individuals with these types of injuries.

The purpose of this study was to determine the current prescribing and assessment practices of optometrists in Canada seeing patients with persistent concussion-associated vision deficits.

## METHODS

### Study Design

- 6-question online survey built and managed on REDCap (Harris, 2009)
- Survey was distributed through provincial and national colleges and associations of optometry in Canada
- Questions pertaining to vision assessment, advice on daily living activity, prescribing habits, appointment duration and scheduling of follow-up appointment(s) were included
- Submitted responses were analyzed and binned

### Respondents

- 142 Canadian optometrists who submitted responses
  - 128 optometrists managed concussion
  - 13 optometrists did not manage concussion (+ 1 blank response)

## RESULTS

### Optometrists That Did Not Manage Concussion

Top three reasons included:

- Referral to a specialist (31%)
- No training (23%)
- Limited practice (23%)

Least common reasons included:

- No reason provided (15%)
- "Tincture of time" (8%)

### Visual Assessments

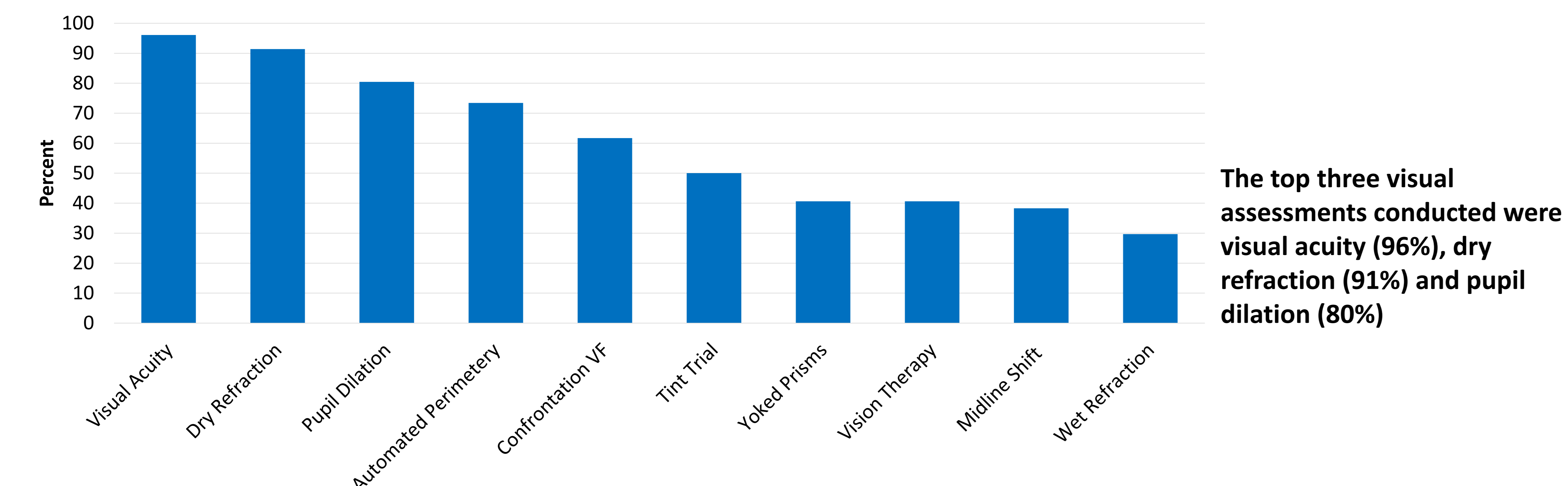


Figure 1. Visual assessments

Responses from 128 optometrists. 'Confrontation VF' stands for confrontation visual field.

## Advice on Daily Living Activity And Prescribing Habits

ADVICE ON DAILY LIVING ACTIVITY	FREQUENCY	PERCENT (%)
Limit	74	64%
Rest	14	12%
Case dependent	12	10%
Referred	9	8%
Watch/be aware	7	6%
Follow specialist advice	7	6%
Tinted lenses	7	6%
Emotional support	5	4%
Educate/explain	3	3%
Positive health behavior	2	2%
Document symptoms	1	1%
Increase anti-inflammatory intake	1	1%
No advice	1	1%

The most frequent advice on daily living activity was to limit activity (64%) followed by rest (12%)

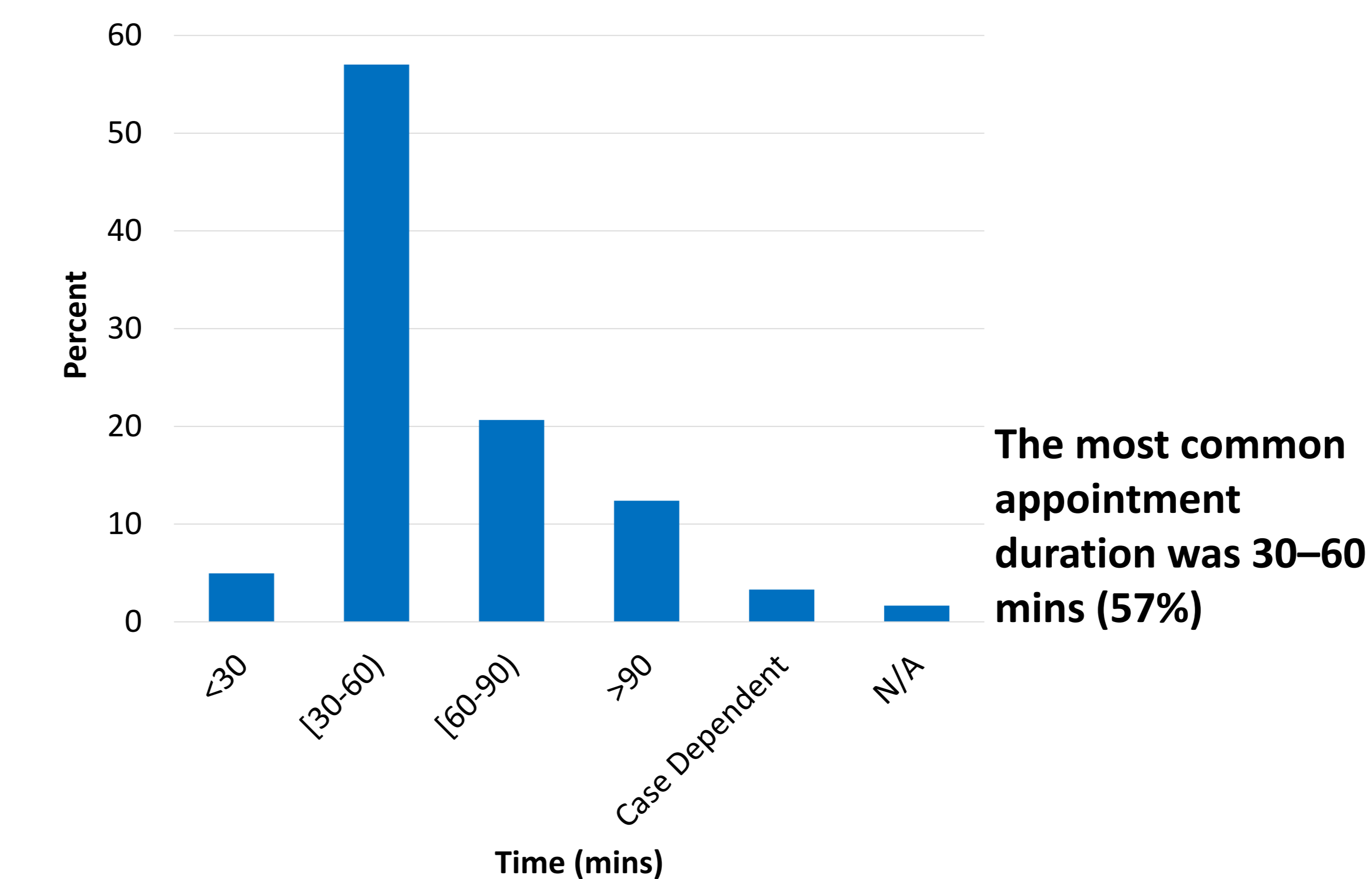
Table 1. Advice on daily living activity  
Responses from 116 optometrists.

MEDICATIONS, OTCs & SUPPLEMENTS	FREQUENCY	PERCENT (%)
Omega 3	14	54%
Oral supplements	10	38%
Lubricating drops	6	23%
Pain medication	3	12%
Topical steroids	1	4%
Water	1	4%
Other	1	4%

The most recommended supplement was Omega 3 (14/26)

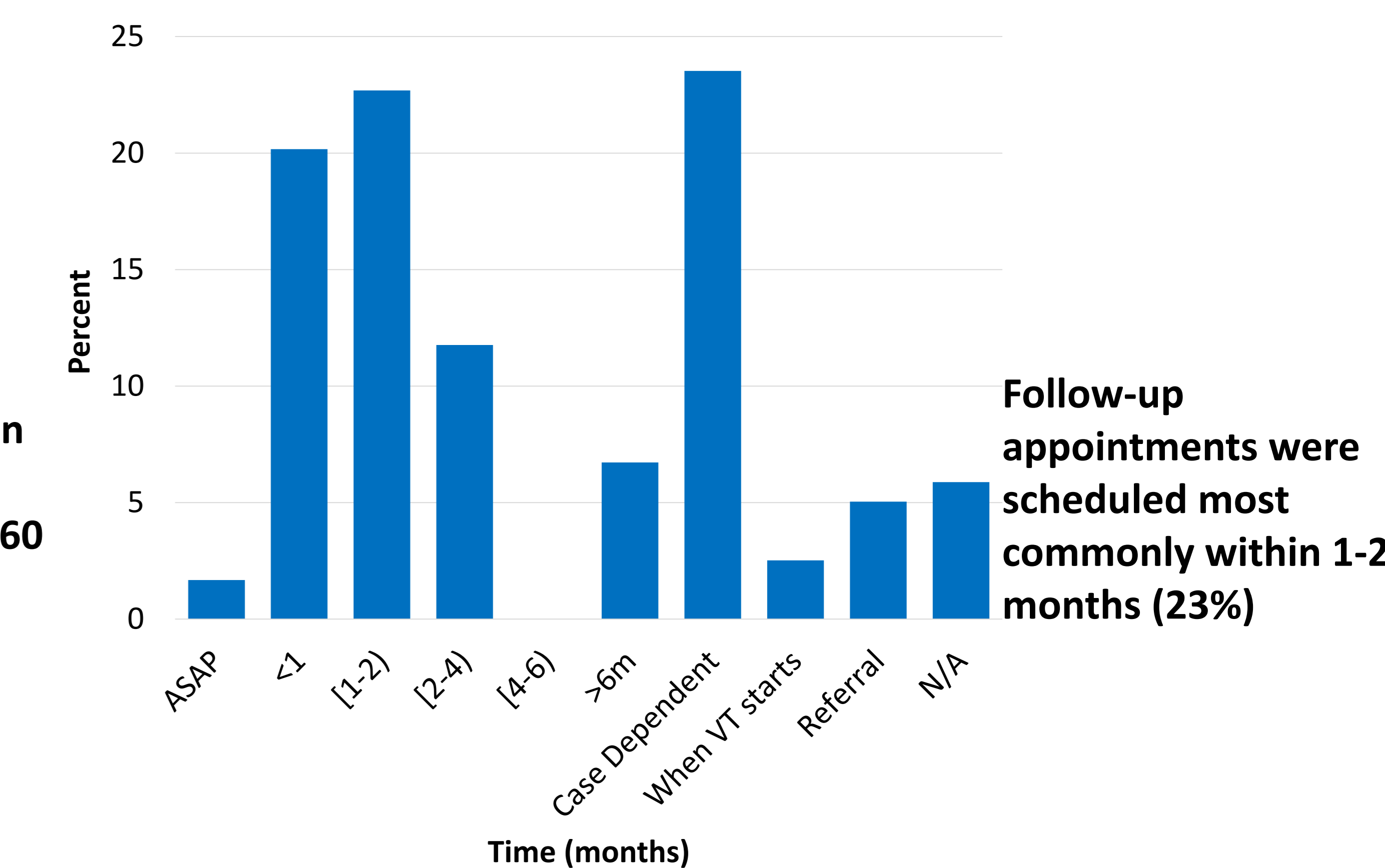
Table 2. Prescription medications, OTCs (over-the-counter) & supplements  
Responses from 26 optometrists.

## Appointment Duration And Follow-Up Appointments



The most common appointment duration was 30-60 mins (57%)

Figure 2. Appointment duration  
Responses from 121 optometrists.



Follow-up appointments were scheduled most commonly within 1-2 months (23%)

Figure 3. Follow-up appointment frequency  
Responses from 119 optometrists.

## CONCLUSIONS

The results from this study provide insight on how optometrists in private practice are managing vision symptoms following concussion. At this time, there is no set standard of care for the optometric management of visual deficits following concussion, however it seems that assessments of visual acuity, dry refraction, dilated ocular health exams, and visual field are commonly done. At a minimum it seems that the above four assessments should be included in the management of a patient with persistent concussion-associated vision deficits. Further research on treatment methods and their effectiveness is required.

## REFERENCES

- Gardner, R. C., & Yaffe, K. (2015). Epidemiology of mild traumatic brain injury and neurodegenerative disease. *Molecular and Cellular Neuroscience*, 66(Part B), 75-80.
- Harris, P. A. et al. (2009). Research electronic data capture (REDCap)—a metadata-driven methodology and workflow process for providing translational research informatics support. *J Biomed Inform.*, 42(2), 377-381.